REPORT

ON THE

Springfield Street Railway Company

SPRINGFIELD, MASS.

Submitted to the

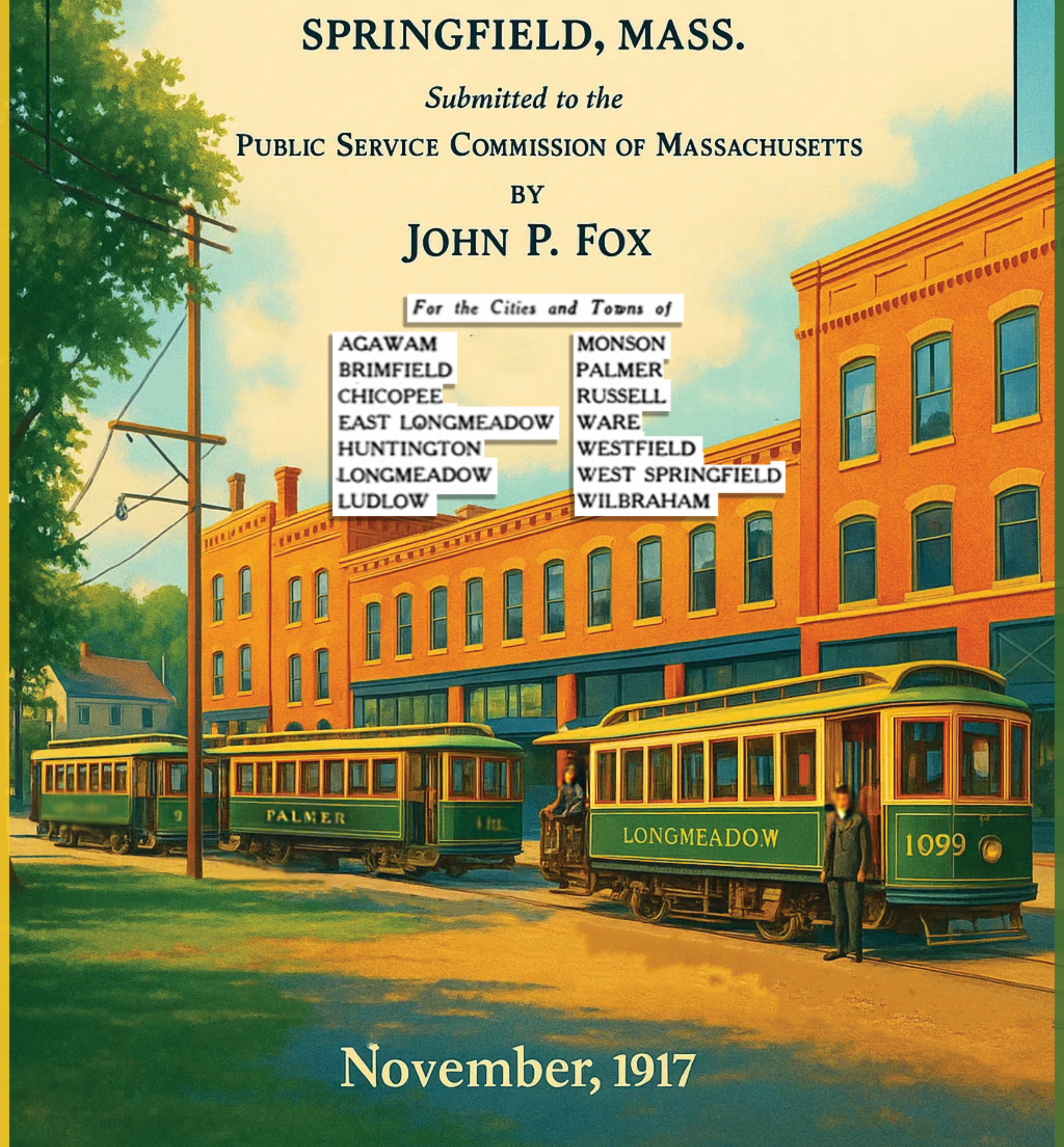
PUBLIC SERVICE COMMISSION OF MASSACHUSETTS

BY

JOHN P. FOX

For the Cities and Towns of

AGAWAM
BRIMFIELD
CHICOPEE
EAST LONGMEADOW
HUNTINGTON
LONGMEADOW
LUDLOW
MONSON
PALMER
RUSSELL
WARE
WESTFIELD
WEST SPRINGFIELD
WILBRAHAM



November, 1917

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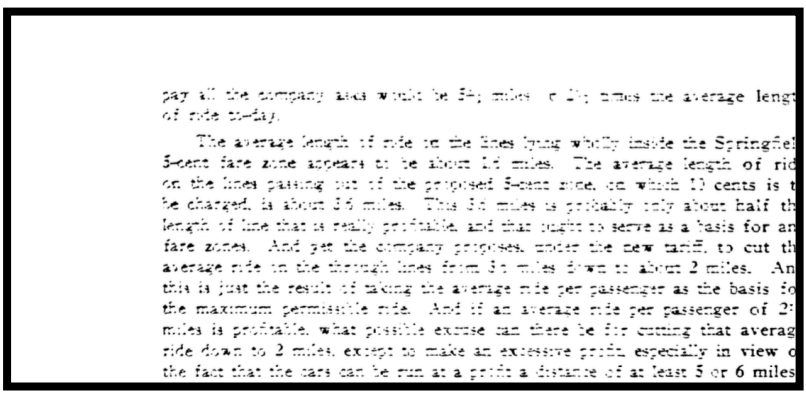
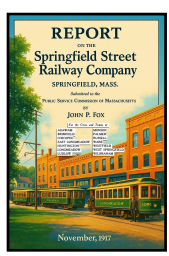


pay all the company asks would be 5½ miles of the average length of ride to-day.

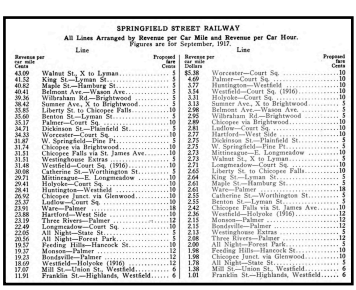
The average length of ride on the lines lying wholly inside the Springfield 5-cent fare zone appears to be about 1½ miles. The average length of ride on the lines passing out of the proposed 5-cent zone, on which 10 cents is to be charged, is about 2½ miles. This 5½ miles is probably only about half the length of line that is really profitable and that ought to serve as a basis for any fare zones. And yet the company proposes, under the new tariff, to cut the average ride on the through lines from 5½ miles down to about 2 miles. And this is just the result of taking the average ride per passenger as the basis for the maximum permissible ride. And if an average ride per passenger of 2½ miles is profitable, what possible excuse can there be for cutting that average ride down to 2 miles, except to make an excessive profit, especially in view of the fact that the cars can be run at a profit a distance of at least 5 or 6 miles

Some of Google's page scans of this particular upload, a 1917 Report on the Springfield Street Railway by John P. Fox for the Public Service Commission of Massachusetts, were badly cut off on the right-hand side and in some places, distorted to the point of almost complete illegibility (*see above*). Since I needed to read the thing anyway, I have taken the time to piece together the portions of the text that were cropped out of view in the digitization process, piecing together the portions illegible.

Thus, some of the pages are the original scans, and others are digital recreations of the lower quality versions of those scans. This is why some pages are scans with imperfect OCR, and others are not. I have recreated the original pages as faithfully as possible, and have not altered the original content in any way, except to correct an error in the table on page 19. You can view the overly cropped/distorted page scans and the original table (*see below*) I have painstakingly reproduced on HathiTrust.



*I may have used some generative AI to make the cover so probably don't look at that **too** closely.*



SPRINGFIELD STREET RAILWAY

All Lines Arranged by Revenue per Car Mile and Revenue per Car Hour.
Figures are for September, 1917.

Revenue per Car Mile	Line	Proposed fare Cents
43.09	Walnut St., X to Lyman	5
41.52	King St.—Lyman St.	5
40.82	Maple St.—Hamburg St.	5
40.41	Belmont Ave.—Wason Ave.	5
39.36	Wilbraham Rd.—Brightwood	5
38.42	Sumner Ave., X to Brightwood	5
35.85	Liberty St. to Chicopee Falls	10
35.60	Benton St.—Lyman St.	5
34.80	Catherine St.—Worthington St.	10
34.71	Dickinson St.—Plainfield St.	5
34.33	Worcester—Court Sq.	10
31.87	W. Springfield—Pine Pt.	5
31.74	Chicopee via Brightwood	10
31.31	Chicopee Falls via St. James Ave.	10
31.31	Westinghouse Extras	5
30.98	Longmeadow—Court Sq. (1916)	10
30.08	Catherine St.—South Livingston St.	5
29.71	Mittenague—E. Longmeadow	10
29.41	Berkshire—Court Sq.	10
28.41	Huntington—Westfield	10
26.92	Chicopee Junct. via Glenwood	10
25.37	Ludlow—Court Sq.	10
23.91	Ware—Palmer	18
23.88	Hartford—West Side	12
23.18	Three Rivers—Palmer	12
22.49	Longmeadow—Court Sq.	10
22.05	All Night—State St.	5
20.16	All Night—Forest Park	5
19.57	Feeding Hills—Hancock St.	10
19.37	Monson—Palmer	12
19.23	Brondsville—Palmer	12
18.07	Westfield—Holyoke (1916)	12
17.69	Mill St.—Union St., Westfield	6
11.91	Franklin St.—Highlands, Westfield	6

Revenue per Car Hour	Line	Proposed fare Cents
$5.36	Worcester—Court Sq.	10
4.69	Palmer—Court Sq.	10
3.77	Huntington—Westfield	10
3.54	Westfield—Court Sq. (1916)	10
3.21	Holyoke—Court Sq.	5
3.13	Sumner Ave., X to Brightwood	5
2.98	Belmont Ave.—Wason Ave.	5
2.89	Wilbraham Rd.—Brightwood	5
2.87	Longmeadow—Court Sq.	10
2.81	Ludlow—Court Sq.	10
2.77	Hartford—West Side	10
2.75	Dickinson St.—Plainfield St.	5
2.71	W. Springfield—Pine Pt.	5
2.73	Mittinegue—E. Longmeadow	10
2.73	Walnut St., X to Lyman	5
2.68	Chicopee via Brightwood	10
2.65	Liberty St. to Chicopee Falls	10
2.64	King St.—Lyman St.	5
2.61	Maple St.—Hamburg St.	5
2.61	Ware—Palmer	18
2.55	Catherine St.—Worthington St.	5
2.55	Benton St.—Lyman St.	5
2.42	Chicopee Falls via St. James Ave.	10
2.42	Westfield—Holyoke (1916)	12
2.35	Berkshire—Court Sq.	10
2.15	Brondsville—Palmer	12
2.13	Westinghouse Extras	5
2.08	Three Rivers—Palmer	12
2.00	All Night—Forest Park	5
1.98	Feeding Hills—Hancock St.	10
1.98	Chicopee Junct. via Glenwood	10
1.92	All Night—State St.	5
1.38	Mill St.—Union St., Westfield	6
1.01	Franklin St.—Highlands, Westfield	6

*The original table stated "Revenue per Car Mile" in both columns, whereas one column actually reflected Revenue per Car **HOUR**.*

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Regards,

— u/alexbarbershop

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LONGMEADOW	WEST SPRINGFIELD
LUDLOW	WILBRAHAM

November, 1917

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To the Members of the Public Service Commission:

Since the hearing before your Commission on September 21st, two months have been spent in studying the Springfield Street Railway situation from the point of view of the 14 cities and towns outside of Springfield itself. It should be clearly borne in mind that this study has not been made from a selfish point of view on the part of the surrounding towns, desirous to escape from any burden of increased fares that might be required over the Springfield Street Railway lines. On the contrary, the instructions given by the counsel were to get at the real facts in the case, to analyze the company's figures and testimony, including Professor Richey's printed report; to find out whether the company really needed more money; and if so, what was the fairest way for all concerned to raise the additional revenue. No hampering instructions of any kind were given, and the conclusions now offered are based wholly on what seems best for the entire district served by the Springfield Street Railway Company and not simply the territory outside the city of Springfield.

It has been the aim throughout to try to understand thoroughly the company's position; to get at their difficulties of finance and operation; to ask the reasons for things that appeared open to criticism. Mr. Wood and his assistants have been most courteous in furnishing information and answering questions.

After examining the evidence introduced at previous hearings by the Company, and going over Professor Richey's printed report with its supplementary information, and then his new figures submitted at the hearings, it became evident that the task was not simply one of going over all the facts and figures to see if they were right and the Company's proposals were fair. No judgment could be passed on the situation without a considerable amount of intensive examination of the Street Railway properties and their operation. And it has been this examination of the railway lines, of the buildings, equipment and service, which has caused the delay in reporting to you. You must realize, of course, that the time has been very short, as it is, to make a satisfactory examination of the Street Railway lines; but an attempt has been made to get at the essential things necessary for passing judgment on the Company's proposals. Almost every line on the system has been ridden over, including the branch lines out of Westfield and Palmer; and service examined from six o'clock in the morning to late at night, including Saturdays, Sundays and one holiday. The speed has been ascertained, stops timed, seated and standing passengers counted throughout many runs, in order to learn whether existing conditions were satisfactory; whether more or less service was required on the different routes; what economies of operation were possible; and whether the proposed increase of fares was justified by the actual conditions seen on each line. The Company's car barns, car storage yard, and shops were visited, operating schedules examined, and all the difficulties inquired into which might hamper the Company in respect to condition of equipment, service and economical operation.

In taking up the fare situation, now, in the light of this investigation one would like to discuss first the raise of fares as proposed by the Company, before going into the larger and more difficult subject of what increase of revenue, if any, the Company requires. Assuming for the moment that a raise of fares is absolutely required, has the Company adopted a tariff which is fair to the

district served as a whole, which does not unduly discriminate against section or sections, and which is likely to produce the income desired by Company in the way to conserve their interests best as well as those of public?

You will recollect that M r. Warren stated at the first hearing that **the** Company rejected the idea of asking for a universal 6-cent fare because it would not produce enough revenue. The Company's estimate of the additional revenue required this year was $618,278, whereas a 6-cent fare, Mr. Warren estimated would only net the Company an increase of $176,000, because of the probable loss of 10 per cent. of the present riders. Even the proposed tariff is estimated to fail to produce the desired results by about $80,000. But it would be hard to devise a more ingenious plan for raising additional revenue than the one proposed. The center of Springfield is left as a 5-cent zone in order to hold on to the highly profitable short haul business and avoid the encouragement of jitneys which a 6-cent fare would bring. The drawing of a two and one-half mile circle around Court Square, Springfield, as the limit of a 5-cent ride will bring in 10 cents from a large proportion of the suburban riders who are absolutely dependent on Springfield for their work, their shopping and their recreation. Again, hundreds of factory workers in Springfield, Chicopee, and Ludlow caught without any warning living across the fare boundary from their work in either city, will be obliged to pay 8 or 10 cents each morning and evening, until they are able to give up their homes and find a new place to live in the city where their work is. The Company in the mean time, however, has certainly chosen as its first fare boundary the line where the largest possible toll be collected from the public with the least possible chance for riders to evade the higher fare.

In the future, in order to cross the existing 5-cent area between any two points lying outside of the 2½ mile radius, it would be necessary under the proposed tariff to pay 15 cents instead of 5. Thus to go from a point just north of the Chicopee line to the northern part of Longmeadow would cost 15 cents for a distance of 5 miles.

Outside of the present 5-cent area, with its proposed doubling and trebling of fares, a 6-cent fare has been substituted for 5 cents without any considerable changes in zones except in the vicinity of Palmer. All of the outside lines have lost most of their overlaps, with great hardships to some of the local riders. The town of Palmer, for some reason, has been hit the hardest by the shift of zone boundaries. Where it was formerly possible to cross the town in any direction for 5 cents, the very shortest ride of 2½ miles under the new tariff will cost 12 cents, or 5 cents a mile. A ride from the Monson line on the sojourn to Lake Junction, a distance of only about 3½ miles, would cost 18 cents, nearly 5½ cents a mile. While from the Monson town line to the Ware line, a distance of less than 7½ miles, the fare will be 24 cents where it is 5 cents to-day. This increase of 380 per cent. in the fare is the largest noted on any of the lines.

Two days were spent going over the lines of the Palmer Division. The first day was a Saturday, and the experiences all the way out to Palmer and back and the riding on the local lines gave one the impression that Palmer wasn't getting, even at the present time, very much for the present fares without having them increased from 20 to 380 per cent. The troubles began [*with/when*] trying to get out to Palmer from Springfield. The first car one intended to take did not appear at Court Square, Springfield, having evidently left ahead of time, as did the car which was finally taken. Twenty minutes was lost in an

hour's run, and Palmer was reached too late to catch any of the regular local cars to Three Rivers, Bondsville, Ware, or Monson, which only run once an hour out of Palmer. It happened that on Saturday afternoons, however, extra cars were running between the regulars, and so a little single-truck car was boarded for Monson. The car was crowded with people going home after an outing or shopping trip to Palmer, and one was obliged to stand for most of the 5½ mile run.

Now the American public puts up with standing on street cars with surprisingly little complaint. But when it comes to standing all the way from Palmer to Monson on a single truck car, it is a thing that no one would willingly do a second time. It seemed as though all the curves on the line were made up of angles, which threw one from side to side. Then the car braked so hard that the motorman, by exerting all his efforts, could just about keep it under control on the grades: except once, when he found it impossible to stop for some would-be passengers, who were so far behind when the car was finally brought to a stop that they had to be left for the next car half an hour later. Finally the power gave out on the return trip from some unknown cause, which even the Power House could not explain.

While it is true that this very disagreeable ride was made on an extra trip and that the regular car appears to be a double-truck one, which would not be affected so much by badly aligned curves, the question comes up what will be the policy of the Company if the proposed fares go into effect on the local Palmer lines? With a fare increase of 140 per cent. on the Monson line, will the people get 140 per cent. better service, or will any increase in revenue all go to pay dividends and provide improvements elsewhere on the system? From the amount of the fare increases in this section, it doesn't look as though the Company wanted to encourage traffic very much. Neither does the fact that the regular headway on all the four local lines is an hour. And yet here are three towns with a combined population of about 25,000 people and six business and industrial centers served. If the Palmer Division were a street railway system by itself, located in a western community of 25,000, instead of being a mere adjunct of the Springfield Street Railway, you can be sure that there would be a very different treatment of the community, and a much more frequent headway than one hour throughout the day. Neither would you find any such increase of fare imposed on factory workers, nor such a handicap placed on travel between the local centers as a 140 per cent. fare raise.

Does the Springfield Street Railway Company really feel that the proposed tariff is quite fair to this section of the system? Is it right to make the employees of the Palmer Wire Mill who happen to live in Monson pay 12 cents to ride each way when they have only been paying 5 cents? The distance isn't very great for 5 cents: about 5¾ miles to the center of Monson. Possibly the line doesn't pay as much as the company would like; but what local lines *can* be expected to pay well with an hourly headway? The exact financial status of these local lines could not be ascertained, because the Company does not have the investment segregated for each single line, nor the operating expenses, either. The Palmer Division earned for the year ending June 30, 1916, an average of 26 cents a car mile while the Springfield City Division earned 28.7 cents a car mile; but the Palmer lines cost less to operate than the city lines, so that net earnings were nearly the same.

On a car hour basis, the Palmer lines make a better showing than the Springfield lines, earning $6.10 a car hour against $5.05 for Springfield.

The Wire Mill in Palmer has about 150 employees who are dependent on the street cars to reach their homes, and they are scattered through the six different centers of population, almost all the people paying 5 cents now each way, a fellow living in Ware paying 10 cents. Under the new tariff, those who now pay cents would have to pay 6 and 12 cents, while those living in Ware would have to pay 18 cents instead of 10 cents each way. A recent traffic count made just on the first cars in the morning after 5:30 A.M show that at least 260 persons a dependent on these first cars on each line to reach work.

If the proposed fare increase were only 6 cents for all persons alike, there would not be so much question as to the fairness of the raise. But here are the six industrial communities, with cotton and woolen mills and the wire mill [*in/of*] Palmer, with the operatives able hitherto to live in at least any one of five localities and ride to work in any other center for 5 cents, thus affording a mobility of labor which is highly desirable in these war times of uncertainty of work and rising cost of living.

These questions of fares, as the Commission will realize, are not things that should be subjected to such radical changes as proposed without very urgent reasons. In a large city, where persons are accustomed to moving, it would be much easier to change one's residence in case of a doubling of street railway fares than in the country towns. And yet in the central area of Springfield where moving is easiest, there is to be no increase of fares; while in the Palmer section, where factories are few and scattered, the largest fare increases have been imposed.

Perhaps some of these statements made and questions raised might seem more appropriate coming from a lawyer than from an expert. But it is impossible for an expert to decide what is right in a fare case like this by considering mere facts and figures without taking into account the human elements that are inseparable from the operation of the lines. And as one rode to Monson this Saturday afternoon on that crowded single-truck car which was earning with a 5-cent fare enough to pay a 6 per cent. return on any well-managed street railway, —as one looked at the passengers and considered whether they could afford to pay 12 cents each way,—the women who had been shopping in Palmer, the children who had been on an outing, most of them looked as though they could ill afford to pay a 140 per cent. raise in the cost of the necessities of life; and in considering all the elements, the distance, the service, the dependence of the people on the street cars, it really doesn't seem the fair thing to put a 12-cent fare on that 5 cent line.

As to whether a 6 cent flat fare for the existing zones on the local Palmer lines would be satisfactory or not, one would like to postpone considering the matter until after finishing with the subject of the increase of fares as proposed.

The fare increase is not so great proportionately on the through lines to Huntington on the west and Brimfield on the east as on shorter runs. The fare from Springfield to Huntington is raised from 25 cents to 34 cents, or 36 per cent. From Springfield to Palmer the present fare is 15 cents and the new one 22 cents, a raise of 47 per cent. From Springfield to the eastern boundary of Brimfield the increase proposed is from 35 cents to 46 cents, or 31 per cent. Ware will have a rate to Springfield of 34 cents in place of 25 cents, an increase of 36 per cent. The fare per mile as proposed ranges from 1 cent to 3¼ cents, with an average of about 1½ cents per mile.

PRESENT AND PROPOSED FARES

Line	Fare limit	Present fare		Proposed fare	
		In Zone Cents	From Court Sq. Cents	In Zone Cents	From Court Sq. Cents
Hartford West Side	Agawam Bridge	5	5	5	5
Feeding Hills	Agawam Bridge	5	5	5	5
Westfield	Silver St.	5	5	5	5
Holyoke	Country Club	5	5	5	5
Chicopee	City line	5	5	5	5
Chicopee Junct	City line	5	5	5	5
Chicopee Falls	City line	5	5	5	5
Chicopee Falls	Cottage St.	5	5	5	5
Palmer and Ludlow	Boston Rd.	5	5	5	5
E. Longmeadow	City line	5	5	5	5
Longmeadow	City line	5	5	5	5
Hartford West Side	State line	—	5	5	10
Feeding Hills	Feeding Hills	—	5	5	10
Westfield	Westfield line	—	5	5	10
Holyoke	Holyoke line	—	5	5	10
Chicopee	Birchem Bend	—	5	5	10
Chicopee Junct	Chicopee Junct	—	5	5	10
Chicopee Falls	Chicopee Falls	—	5	5	10
Chicopee Falls	Chicopee Falls	—	5	5	10
Ludlow	Winsor St.	—	5	5	10
Palmer-Worcester	City line	—	5	5	10
E. Longmeadow	E. Longmeadow	—	5	5	10
Longmeadow	State line	—	5	5	10
Westfield-Huntington	Russell line	5	10	6	16
Westfield-Holyoke	St. Mary's Cem.	5	10	6	16
Local Westfield lines	Mill St., etc.	5	10	6	16
Palmer-Worcester	N. Wilbraham Switch.	5	10	6	16
Westfield-Huntington	Old Trotting Pk.	5	15	6	22
Westfield-Holyoke	Southampton line	5	15	6	22
Worcester	Tennyville Junction	5	15	6	22
Ware, etc.	B. Switch	5	15	6	22
Westfield-Huntington	River Bend Pk.	5	20	6	28
Worcester	Wells Turnout	5	20	6	28
Monson	South Monson	5	20	6	28
Three Rivers	Three Rivers	5	20	6	28
Bondsville	Bondsville	5	20	6	28
Ware	Forest Lake	5	20	6	28
Westfield-Huntington	Huntington	5	25	6	34
Worcester	Summit Sta.	5	25	6	34
Ware	Ware	5	25	6	34
Worcester	Brimfield (Monument)	5	30	6	40
Worcester	E. Brimfield (W't'g Rm.)	5	35	6	46

But here comes up the question whether it is right to raise the fare on lines which are already earning sufficient income. The through cars to Palmer and Worcester earned in September about 34½ cents a car mile, which represents the very maximum the Company has asked for. The line from Springfield to Westfield earned for September 42¼ cents a car mile, but considerable allowance must be made for the travel to the military camp north of Westfield, so that the figure of 31½ cents a car mile for September last year is a safer one to judge the line by. The Huntington line from Westfield earned 28 cents a car mile in September, but was found to be exceedingly short of power, and a suggestion will be made later as to economy on this line.

The feature about the change of rates on the through lines which appears likely to work most hardship on individuals is the proposed abolition of practically all of the overlaps. Now perhaps some of these overlapping zones may be

inconsistent when compared, as to their length; but on the other hand, after e have been in existence a long time and when they afford people an opportunity to ride to and from work for 5 cents each way, is it quite just to raise the fare in one jump from 5 cents to 12 cents, as in the example already cited of the employees of the Palmer Wire Mill who live in Monson? Of course, the cutting out of the overlaps is a very shrewd way of getting more revenue from regular passengers all along the lines who are dependent on the street cars get to and from work. On the other hand, if the overlaps are to be abandoned would it not be very much fairer to adopt the Copper zone system on the through lines, and charge all passengers alike according to the distance that they actually ride? It does seem, however, as though no change should be made in the existing zone boundaries and overlaps if the change is going to inflict real hardship on even a small number of individuals. It is better to avoid strictly consistent fare system, even one like the Copper zone system, if it is going to work real injustice to persons who cannot afford to pay more than the existing fares, and especially those who have bought homes and found permanent work inside the same existing five cent area.

Before leaving the matter of overlaps, it should be pointed out that, generous as the Company has been in many ways, there is at least one instance existing to-day where the company could extend a fare zone and accommodate people working in the mills without costing a cent of money in return. This instance occurs in the case of persons who live in Westfield and work in the paper mill at Woronoco. The fare limit is about a mile east of Woronoco, so that it costs 10 cents to reach Woronoco even from the western part of Westfield. As a result, the Westfield workers have to get off the cars at the fare limit at the boundary line between Westfield and Russell and walk the rest of the way to Woronoco, though the car could carry them the intervening distance without any additional cost to the Company.

An example of the hardships which cutting out existing overlaps will cause can be pointed out in the town of Brimfield. Where the Library is situated just west of the center of the town, an overlap is in existence which permits people living in East Brimfield to reach the Library for 5 cents. This accommodation, which is certainly an important one for the good of the town, will be entirely wiped out with the new fare system, and 12 cents will be charged from East Brimfield to the Library. As this car line is earning at the present time over 34 cents a car mile, which is all that the Company at the very most has asked for, the question is, why should the fares be raised at all, and why should this little half mile ride west from the Soldiers' Monument be changed to 6 cents fare, for all who need to reach the Library from East Brimfield?

The Company has taken advantage of the fact that overlaps have not been demanded or are not yet required on every line where there are now fare zones to undertake their abolition on all lines. Such a policy is not only an unjust one to impose at this date on lines with long established traffic, but it is a question whether it is a sound business policy on the part of the Company. While the abolition of overlaps might not lose very many fares at the present time, and while overlaps can undoubtedly be dispensed with on certain open stretches of country, their abolition practically raises the minimum fare for a large amount of territory from 5 cents to 12 cents, by requiring the payment of 12 cents to ride across any outside zone boundary, even for a distance of a mile or half a mile. Now as short haul traffic is the most profitable thing in the street railway business, is it wise to permit a company, which says it is in such urgent need

of more funds, to discourage the most lucrative kind of business, wholly aside from the injustice to its patrons?

The Company evidently expected the abolition of the overlaps to be one of the most unpopular features of the whole plan to raise the fares; for, in estimating the probable loss of traffic under the different features of the new tariff, the greatest loss of all was allowed for in connection with the abolition of overlaps, viz., 15 per cent. The estimated losses under all the other conditions are 6 and 8 per cent.

Instead of cutting out the overlaps, it would really seem a more far-sighted policy on the part of the Company to study all their lines, and establish a universal system of overlaps, treating all sections and patrons exactly alike in this respect, and seeing whether they cannot build up more short distance riding, instead of discouraging what they already have. It is an important fact to consider in this connection, that in England, where the zone system of fares has been most carefully worked out, in order to be fair to every one and encourage the short haul traffic to the utmost, overlaps have been found absolutely necessary, even though the fare for each zone is only 2 cents. The result has been, as you probably all know, the development of short distance riding to an extent practically unknown in this country, with from 2 to 3 times as many passengers carried per car mile as in Springfield and a return on the investment which seems almost incredible. The Liverpool street railways earned last year, with an average fare of 2¼ cents, with a base fare of a penny and universal overlaps, no less than 15 per cent. on the investment, after paying all taxes, war bonuses, increased prices, higher wages, and a large sum to the families of the 70 per cent. of the total force who were in the army. Glasgow, with a still lower fare, averaging a cent and a half per passenger, earned no less than 11½ per cent. on the investment, including all taxes and war expenses.

The whole system of raising fares as planned seems to be wrong in putting up all these barriers, not only to travel between towns, but even inside of towns. Here we have had travel encouraged for years and the public accommodated more and more, and now the whole policy is to be changed, and barbed wire entanglements are to be erected across the lines all over the system to hold up the car riders and get more money from them. The thing certainly does not seem fair to the public, and is it the best policy for the company to begin the process of raising more income by any such radical method of discouraging travel and by imposing such hardships on the very people whom they must depend on for getting their revenue?

As an argument for introducing 10 cent fares into the present Springfield 5 cent zone, the Street Railway Company has laid much stress on the extremely large area now served by a five cent fare, 66 square miles, and Professor Richey, in his printed report, gives maps and statistics for 29 cities in New England and other sections of the country, in which only one city appears with a larger area served for 5 cents than Springfield, viz., Los Angeles, California, and only one city has such a sparsely settled territory and low density of population as Springfield, viz., Holyoke.

Now it is perfectly true that the Springfield Street Railway *does* serve a very large area for 5 cents. It has been a splendid thing for the surrounding cities and towns and also a very profitable thing to the company. But in trying to emphasize this point, it seems a little unfortunate that Professor Richey should have left out of his report all the cities with still larger 5-cent areas than Springfield except the one included, Los Angeles. The Commission has prob-

ably noticed that even a city so near as Boston does not appear in the list. Now, while the boundaries of the Springfield 5-cent zone enclose an area of 66 square miles, the Boston Elevated 5-cent zone has an area figured out by D. J. McGrath, of the Institute of Technology, as 81 square miles, or 98 as determined by Bior J. Arnold, which is about 50 per cent. larger than the Springfield zone. Philadelphia, Mr. McGrath found, serves an area of 91 square miles, while the Chicago surface lines serve for a single 5-cent fare an area no less than 182 square miles, or nearly three times the area found in Springfield. On the completion of the dual subway system in New York in a year or two, the Interborough Rapid Transit Company will serve for 5 cents an area of about 110 square miles, and the Brooklyn Rapid Transit Company will also cover almost exactly the same area of 110 square miles.

As to Springfield's having to serve a very sparsely settled territory, here again Professor Richey's calculations seem a little misleading. He gets his total area of 66 square miles by connecting together by straight lines all the ends of the 5-cent routes without any regard to the distance between these routes, the character of the country, or the territory really served by each route. On a street railway system like that of Springfield, where the lines radiate in every direction from the center of the city, an enclosed area can naturally be drawn which is very large but includes far more than the territory really served. In making time zone maps of cities, the most accurate practice is to take as the area served by each surface line a belt lying within half a mile on each side of a line, or one mile wide in all. Professor Richey, on the other hand, connects up the ends of lines five miles apart with straight lines, and naturally takes in a considerable amount of farm land all around Springfield, which greatly dilutes the density of population, and gives the misleading impression that the Springfield Street Railway Company has been altogether too generous in constructing its lines for the number of inhabitants in the district.

As to what really makes a street railway pay, it isn't of course the number of square miles inside the boundaries of the system, nor the density of population in the area served, nor even the number of people living within a half a mile distance of each line. Neither is it the length of the average 5-cent ride out from the center of a system, nor the longest possible ride for 5 cents way across a system.

A good deal of emphasis is laid on the fact that the Springfield Street Railway Company gives very long rides out from Court Square, and it is perfectly true that some of the distances are very generous compared with other cities. On the other hand the average length of the Springfield routes, or the average radius of the territory served, even as given by Professor Richey, is not exceptional compared with other large cities of the country. The ride from Court Square to Ludlow is a generous one of 8⅓ miles, but a number of street railways have equally long or longer lines radiating from the center. Boston furnishes one of 9 miles; Chicago, 8¾; Pittsburgh, 8½; Bronx Borough (New York), 8¾ miles; Staten Island, 11⅓; Brooklyn, 13¾; Manhattan surface lines, 14 miles; while the Interborough Company at the present time is giving a ride from the lower end of Manhattan Island to the Bronx of no less than 21½ miles for 5 cents, which, even at that, is not the longest possible ride over the system.

As to the longest ride across a system, Springfield again is very generous in permitting a person to go from Ludlow to Feeding Hills for one fare, a distance of 16⅙ miles, following the very circuitous route, or 12⅓ miles in an air line. Boston, on the other hand, permits a ride of 18 miles across the system. The length of the longest possible ride in Chicago is not at hand, but there has

been one through route no less than 17¾ miles long without a change of car. The Interborough Company in New York again furnishes a very startling example of the longest ride across a system for 5 cents, at the present time giving a ride from Atlantic Avenue, Brooklyn, to 241st Street and White Plains Road in the Bronx, a distance of 22¾ miles. In a year or two this distance will be lengthened out to 27½ miles for 5 cents, compared with 16⅙ miles for Springfield.

It may seem somewhat far-fetched to be comparing the New York Subway with the Springfield Street Railway lines. And yet the things that make it possible for the Interborough Company to haul passengers such excessive distances over such exceedingly expensive lines, to pay 20 per cent. dividends on their capital stock and actually earn enough to pay 45 per cent.—these are the very things that if applied in Springfield would help the company most in solving their present difficulties. This does not mean for a moment the building of a subway or elevated line in Springfield, but merely applying the principles that have made the rapid transit business so profitable in New York to surface operation in Springfield.

For the year ending June 30, 1916, both the Interborough and the Springfield Street Railway had the same earnings per car mile, 27½ cents. But here is where the great difference comes in: the New York Subway was operated for 10 cents a car mile, where the Springfield company paid out 21 cents. This gave the Interborough net earnings of 17½ cents a car mile against 6½ cents for Springfield. The exceedingly low operating cost of the New York Subway was due to the following elements, all of which are applicable to a greater or less extent to a surface railway.

In the first place the city cooperated with the Interborough Company in furnishing them with a line, above or below ground, free from all the interruptions of a surface street railway, such as pedestrians and vehicles, permitting an average speed of 18 miles an hour. Cars on city streets cannot expect to get any such freedom from interruptions or such high average speed, but considerable improvement *can* be obtained by getting municipal cooperation, especially that of the police, in keeping vehicles off the tracks. This has been most successfully done in Cleveland, where, as you know, the average speed was increased, through Mr. Witt's efforts on behalf of the city, from 9.6 to 11 miles per hour, or nearly 15 per cent.

Another very important and often inexpensive way for the city to cooperate in keeping vehicles off car tracks is by providing specially attractive streets for automobiles and trucks paralleling street car lines. New York has several notable examples of such automobile streets, such as Lafayette Street and Fifth Avenue; and as soon as a snowstorm begins these streets are plowed off by the city, so that vehicles do not have to seek the car tracks in order to get through, and thereby delay the cars. Springfield has under consideration at the present time, in the Dwight Street widening and extension, a traffic artery paralleling Main Street, which, if reserved for automobiles and other vehicles, might completely solve the problem of congestion on Main Street, by attracting vehicles to a street where they could make far better time than when mixed in with cars on Main Street, leaving the latter open for faster service or more cars. But the street railway company is planning to lay car tracks on Dwight Street and North Street, and spend a large sum of money in preventing one of the most effective methods of relief which the present time offers.

The New York Subway speed is also high because the stops are not too frequent, a matter in which great improvement is possible in Springfield, and another

thing in which municipal cooperation can help, just as Peter Witt put through his skip-stop plan in Cleveland, from which both the public and the company has benefited greatly.

Another factor which makes such long rides profitable in New York is the operation of cars in trains, a practice now quite. common in large cities, but never adopted in Springfield, where you can find as many as 16 cars operating separately on a single headway. In Europe even three-car trains are·found in such large cities as Berlin, and they are being considered for Cleveland.

In view of the growing interest in the one-man car and the surprising increases of traffic and economy of operation found in its use, it is very suggestive to remember that one of the chief elements of economy in subway and elevated operation is the fact that one-man cars are used, there being just men on a 10-car train in New York. No one questions the safety of such operation, and it is interesting to consider how long we have really been accustomed to one-man cars under the severest conditions of overcrowding and rush hour difficulties.

Now let us return, after this digression, to a consideration of the central area of Springfield, and examine more closely the proposal of the company to establish two 5-cent zones where at present there is only one. As all of you may not be very familiar with Springfield, perhaps the real significance of two 5-cent zones will be more clearly seen from their application to a map of the Boston Elevated System. This map shows in blue the surface lines of Boston Elevated Company. The boundary of the 5-cent area is the red line except that the Bay State lines radiating from Scollay Square are not included Around the City Hall of Boston as a center, two black circles have been drawn at the proper distance to represent the average distance to which one can ride from the center of Springfield at Court Square for 5 and for 10 cents. The circles have been drawn so as to favor the Springfield situation as much as possible. For example, the inner black circle, 3½ miles from Boston City Hall does not represent the average length of all the Springfield 5-cent lines, which would include lines shorter than 3 miles and result in a smaller circle. It represents the average distance of the 5-cent zone limit on the through line only. Again, the inner black circle does not represent the actual line distances of the 5-cent fare limits from Court Square, Springfield, but represents from the actual distances along the tracks. Some of the routes very circuitous, and will be shortened greatly when the new bridge is built across the Connecticut, making this map still more lenient in favor of the company. The inner green circle, 2.6 miles from Boston City Hall, indicates the average the air line distances from Court Square, Springfield, to the 5-cent fare limit and coincides practically with the 2½-mile circle referred to by the company as the basis, for fixing the 5-cent fare limit.

It is clearly understood, of course, that one can travel anywhere inside the inner circle for 5 cents, universal transfers being given. To ride from the second zone to any point in the first zone would cost 10 cents, while to cross from the second zone on one side of the city through the central area into the second zone on the other side would cost 15 cents. Any point in the center zone can be reached from the third zone for 16 cents, but to go from the third zone on one side of the city through to the third zone on the other side would cost 27 cents, that is 16 + 5 + 6 cents.

You can see at a glance how radical the Springfield proposition is. The central 5-cent area as shown on this map includes in their entirety only Charlestown, East Boston, and South Boston. All of Somerville west of Winter Hill

would have to pay 10 cents to reach Boston. Malden, Medford, Arlington, Belmont, Watertown and Brighton would be in the 10-cent area. Only the part of Cambridge east of Harvard Square would have a 4-cent fare. Brookline could only be reached for 10 cents except part of Longwood. Egleston Square and Grove Hall would be just outside the 5-cent area, and all of Dorchester south of Meeting House Hill. Still further no less than 11 Boston elevated lines would run outside the 10-cent area into the 16-cent area, so that it would cost 16 cents to reach Spot Pond in Middlesex Falls, Arlington Heights, Belmont, Waverly, Watertown Station, Newton, Spring Street and Germantown in West Roxbury and the old Hyde Park line on Hyde Park Avenue, Oakland Street, and Mattapan.

The proposed Springfield fare plan is certainly an application of the zone system in a very extreme form. Long distance riding would be greatly discouraged, and, if applied to Boston, even moderate crosstown rides would cost 10 and 15 cents, while to take the longest possible ride across the system from Arlington Heights to Spring Street, West Roxbury, would cost 27 cents instead of 5.

If the Boston Elevated Company came to you with any such proposition as this Springfield plan, there is no doubt as to what the public would say, and little question as to how you would act. Do you wonder that the cities and towns around Springfield are up in arms against any such raise of fares? Would you for one minute consider permitting the Boston Elevated Company to charge 10-cent fares to all the area outside the first circle and 16 cents to the territory beyond the second circle? And yet that is exactly what the Springfield Street Railway asks you to permit.

Before returning to the Springfield situation, just see how the Springfield fare zones look on this map of New York City. The zones are drawn just as they were on the Boston map, using New York City Hall as the center. The black figures are what the Springfield fares would be; the red the existing New York fares from lower Manhattan. The longer ride possible in the 16-cent zone than in the 10-cent zone is due to the influence of Westfield in the width of the zone, as Westfield would afford a 7¾-mile ride for 6 cents. All the colored area on this map can be reached from City Hall, New York, for 5 cents on the completion of the new subways. You can see at once that the Springfield fares, applied to New York City, would hit the public even harder than in Boston. Far larger areas are in the 16-cent zone, while the four northern ends of the Interborough systems extend even into the 22-cent zone. Here again the map is drawn so as to err on the side of favoring Springfield. The real fare to Jamaica on the east under the Springfield rates would be 22 cents from Manhattan, instead of 5, while the fare to 241st Street and White Plains Road in the Bronx would be 28 cents instead of 5. Palmer would be well inside the New York 5-cent zone, whereas the proposed fare is 22 cents. Huntington is practically the same distance from Springfield as 241st Street is from the Battery, and, if situated in the Bronx, would have a fare of 5 cents instead of the 34 cents proposed.

The Street Railway Company will undoubtedly criticize the comparisons made between Springfield and Boston and Springfield and New York on the ground that the density of population is much greater for Boston and New York. That is true on the whole, but some of the transit lines in New York run through territory that is still very sparsely settled.

Coming now to a final consideration of the Springfield central area and the creation of a new 5-cent zone, there might be more excuse for charging 10

cents instead of 5 if the lines affected did not pay well. It must be admitted that a few of the lines fall below the average in their earnings, such as Fee Hills, the Hartford East Side Line, and the Hartford West Side Line. In the dozen lines as a whole, they make a remarkably good showing. For most of September just past, they earned on average 30 cents a car mile, which is all the Brooklyn Rapid Transit System earns and requires to pay its 6½ cent dividends. The short haul lines lying wholly inside the 5-cent area Springfield naturally earn more than the lines which are twice as long, with some of them going out into the country. The short lines in the 5-cent area earned 37½ cents for September against 30 cents for the longer lines where 10 cents is proposed.

Now it is just the profitable condition of the longer lines out of Springfield that makes them appear such attractive propositions for raising more revenue. If you can cut lines in the middle that are earning 30 cents a car mile, hold up the passengers for a second fare, you can afford to lose considerable traffic and still get a large increase in earnings. Take the four lines running to Chicopee for example. These earned for September, taking them together, about 31½ cents a car mile. With a 10-cent fare, the company expects to lose 6 percent of the traffic and have 60 percent of the remaining passengers use 8-cent tickets. Even then, the earnings per car mile of these lines would jump roughly from 31½ cents to 52½ cents a car mile. Now this 52½ cents is an indication of the utter unreasonableness of any such raise of fare on local lines. There is no street railway, even on Manhattan Island, that is earning 52½ cents a car mile. The nearest approach to it is the 42nd Street Manhattanville and St. Nicholas Avenue Railway Company, which is earning about 46½ cents a car mile, and operates in the most profitable sections of New York, on 42nd Street and upper Broadway, connecting the Upper West Side with the theater and hotel district and the Fifth Avenue shopping section.

When you consider that this New York railway is operating in a location with fifty-two times the density of the Springfield 5-cent area, you can see the absurdity of expecting Springfield lines to pay anywhere near such a rate and the unreasonableness of expecting the passengers to contribute any such sum of 52½ cents a car mile.

The remaining lines out of Springfield where the 5-cent fare is increased to 10 make an even more impossible showing than the Chicopee lines because the latter have a reduced fare in the shape of tickets. Even allowing for an 8 percent loss of traffic, the company's expectations would amount to earnings of practically 60 cents a car mile. Is there any possible excuse for any such hold-up of the passengers who are obliged to cross the 2½-mile circle around Court Square, except that the company wants money and hopes to be in a position to make the passengers pay whether they want to or not?

Just look at the thing in another way. This proposed fare increase would encircle Springfield with a belt where the passengers will have to pay 10 cents for an ordinary ride, and the earnings per mile will be from 50 to 60 cents. Inside this circle, there will be a 5-cent fare and outside a 6-cent fare with earnings of possibly 35 cents a car mile. One dislikes to criticize the company's proposal, and yet the whole thing seems utterly unjust and unreasonable.

It might be well now to look a little more closely at the earnings of the lines where the fare is to be raised from 5 to 10 cents. Professor Rice stated in his testimony at the first hearing that the average profitable haul of the Springfield lines was about 2½ miles; which influenced the placing of the 5-cent fare limit near a 2½-mile circle drawn around Court Square. This

would result, as pointed out at the hearing, in limiting to 2½ miles the maximum distance that persons starting at Court Square could ride for 5 cents, instead of the average distance. In other words, the company is using the average ride on the cars as the basis for fixing the maximum ride for 5 cents.

In his survey, Professor Richey found that the average ride of all the passengers on the Springfield Division was 2.43 miles, and in his report, he figures out that the paying haul is from 2.11 miles to 2.82 miles, according to different methods of estimating the distance and different allowances for expenses and return on the investment. Now, as you realize, the paying haul on any line is dependent, not so much on the length of the line as on the volume of traffic throughout the day. If the cars are well filled all day long, as is the case with most of the Springfield lines, a long average ride is possible without loss to the company, and a still longer maximum ride.

Now, it is the maximum profitable distance that the cars can run on any line that ought to determine the length of a fare zone or the maximum distance that a passenger ought to be allowed to ride for 5 cents; and this maximum profitable run that cars can make is very different from the 2½-mile figure which Professor Richey has used as a basis for locating the 5-cent fare limits around the central 5-cent area. Take the Ludlow line for example, which gives the longest ride out of Springfield, about 8½ miles, for 5 cents. This line earned in September 25½ cents per car mile against an average of 32 cents for the system. But the traffic is very heavy on the line, though the distances are great, and the earnings per trip for September averaged about $2.12, which means a very profitable loading of the cars all day long, an average of 42 fare passengers per trip in cars seating 44.

While this line, taken as it is, with the very high operating expenses of the company, does not earn as much with its 8½-mile length as the average line, at the same time there is no excuse for limiting the ride out from Springfield to 3.2 miles before charging a second fare. The actual length for the Ludlow line that would pay the company as much as the average line did for September, viz., 32 cents a car mile, is 6½ miles instead of 3.2. And if the line were required to earn the very maximum which the company asks for, viz., 34 cents a car mile, its length could still be 6¼ miles with a 5-cent fare.

Professor Richey stated at the first hearing that he thought the Chicopee lines were losing money on a 5-cent fare because the business was practically all a long-haul traffic. It has already been shown that the Chicopee lines were earning as a whole 31½ cents a car mile at the present time, which the company wants to raise to 52½ cents. Analyzing one of the lines for September, the Liberty Street route, the length of the line is a little over 5½ miles, the earnings per car mile nearly 36 cents, and the earnings per trip about $1.65. This means that this line is not only paying better than the average for the system but that it could be lengthened out over half a mile and still pay. With the maximum earnings desired by the company, the line is still shorter than the profitable length, and yet the company proposes to double the fares.

Professor Richey's survey last winter brought out one interesting point, that the average ride, even on the longest lines, does not anywhere near approach the maximum profitable length of the different lines, even giving the company the largest earnings asked for. The Feeding Hills line, for example, the poorest paying one out of Springfield, and one in great need of more economical operation, showed an average length of ride for each passenger during the survey of 2.4 miles. But the maximum length of line that would

Paying all the company asks would be 5½ miles or 2½ times the average length of ride today. The average length of ride on the lines lying wholly inside the Springfield 5-cent fare zone appears to be about 1.6 miles. The average length of ride on the lines passing out of the proposed 5-cent zone, on which 10 cents is to be charged, is about 3.6 miles. This 3.6 miles is probably only about half the length of line that is really profitable, and that ought to serve as a basis for any fare zones. And yet the company proposes, under the new tariff, to cut the average ride on the through lines from 3.6 miles down to about 2 miles. And this is just the result of taking the average ride per passenger as the basis for the maximum permissible ride. And if an average ride per passenger of 2½ miles is profitable, what possible excuse can there be for cutting that average ride down to 2 miles, except to make an excessive profit, especially in view of the fact that the cars can be run at a profit a distance of at least 5 or 6 miles?

Professor Richey, in referring to the Ludlow and Chicopee lines, spoke of the disadvantage of having the population live at the ends of the lines, because it required the cars to run all the way through. On the other hand, the picking up of loads within a short distance of one end of a line and carrying them all the way through is very economical in one respect, in reducing the stops along a line to a minimum and thus permitting higher speed, especially where the territory is sparsely settled between the centers of population. Commissioner Eastman asked about the speed of these through-cars. On the Ludlow line going east in one morning rush hour, a maximum speed of 25 miles per hour was found, and going west a speed of 30 miles per hour, both obtained on paved city streets with car-tracks in the center of the roadway.

The Springfield Company is fortunate in one respect, in having these centers of population and factories located out on the suburban lines, because the result is a heavy travel in both directions, both night and morning. And the peak load is also much better distributed than in many cities. The cars which carry workmen in the morning from Springfield to Chicopee and Ludlow for the opening of the factories at 7 o'clock, come back loaded with the workers in the stores and offices of Springfield; while at night the direction of travel is reversed. This distribution of the peak load is such that, at the time of the survey, the number of seats furnished per hour in the evening rush period was only 48 percent greater than the minimum number furnished in the slack morning hours, a great contrast to Cleveland, where 3¼ times as many cars are required in the rush hours as in the middle of the day.

Indeed, Springfield is so fortunate in its distribution of factories and working population from the street railway standpoint that it would seem as though the company would make every effort to avoid any method of discouraging travel, such as raising fares. And no one can ride on the crowded cars of these through lines, in the early morning hours and when the workers are going home at night, looking at the character of people to see if they could afford a 10-cent fare without feeling that the raise would be a real hardship to many poor people and an unfortunate move for the company in their own interests. Just why the proposed tariff was proposed at all it is very difficult to understand, after considering all its objectionable features. It was probably thought out in the offices, where it was very easy to forget the factory workers, the homeowner in the suburbs, the shopgirl, and the poorer people of the community who would be most affected.

And how in the world can the company collect the second fare on some of the cars crowded with 80, 100, and as many as 140 passengers? Will the foreigners submit meekly when the conductor comes around, or will they get off and walk to avoid the second fare, as they do now at some points? Are they likely to be as susceptible to arguments that the company must have their money to pay dividends as are the businessmen of Springfield, and is it wise for the company to face the risk of trying to collect what many foreigners may with reason believe is an unjust tax? And may not even the rioting be repeated on some lines which was created in Brooklyn when the company first raised the fare to Coney Island to 10 cents?

Again, will the company get the increase expected from the 10-cent fare in the central area? Will not people walk more to avoid it than has been estimated? Is it possible that lines that are already paying can be made to nearly double their present earnings and bring in from 50 to 60 cents a car mile? Can the earnings on New York's most crowded and profitable lines be exceeded in Springfield, with a population serving the lines only one-fiftieth as dense as in New York?

The inequality of the burden placed on the car riders by the proposed raise of fares can perhaps be best illustrated by the average fare that would have to be paid by those riding outside the central Springfield 5-cent area. Now, the average fare that would be paid by passengers under the new plan, taking the system as a whole, would be 6.3 cents, which does not look very bad. This 6.3 cents, by the way, it should be borne in mind, could not be obtained by charging a flat fare, because, as Mr. Warren pointed out, there would be a probable loss of 10 percent of the traffic over all the lines. As it is, an average loss of nearly 10 percent in the traffic is expected wherever the fare is raised, or a net loss for the system as a whole of a little over 3 percent. But this loss is more than made up for by the large fare increases, varying from 20 to 380 percent. As a result of these increases, while the people living and riding in the center of Springfield will only pay 5 cents for a ride as now, those outside of the central area will be obliged to pay an average fare of not less than 8.3 cents. In other words, the fare of about 20,000,000 passengers will be increased at one jump from 5 cents to 8.3 cents.

Since the hearing on October 23rd, considerable new light has been obtained on the financial returns from the different lines of the company. While no figures were available as to the operating expenses and return on the investment for each line, the company was able to supply such figures for the three divisions of the system for the year ending June 30, 1916, that is for the Springfield City Division, for the Palmer Division (on the lines of the Springfield and Eastern Street Railways), and the Westfield Division (on the lines of the Western Massachusetts and the Woronoco Street Railways). The situation was also studied in the light of the earnings per car hour in comparison with the earnings per car mile.

It was found that the earnings per car hour gave a much better indication of how lines were paying than the earnings per car mile, because the operating expenses were naturally less on the faster lines in the suburbs and outlying cities and towns than in Springfield. For example, the Springfield City Division, for the year ending June 30, 1916, earned 28.70 cents per car mile, while the Westfield Division earned only 20.75 cents, or only 72 percent as much, a very poor showing apparently. But the Westfield lines cost only 15.70 cents to operate per car mile, while the Springfield City lines cost about 22.00 cents to operate.

operate, giving the Westfield lines a net revenue only 1.65 cents less than the Springfield lines, instead of the 8 cents less which the earnings per car mile would indicate. If the earnings per car hour of the two divisions are compared, it will be seen that the Westfield lines are doing practically as well as the Springfield lines; for the Westfield lines earned $2.58 a car hour for the year in question, against $2.47 for Springfield, while the net revenue per car hour is identical, viz., $0.60. The Palmer Division, which earned 26 cents a car mile, or nearly 3 cents less than the Springfield Division, earned $3.04 a car hour, or about 18 percent more than Springfield, with a net revenue equally larger. These facts certainly appear to demolish any argument that fares ought to be raised on the Westfield and Palmer Divisions, because they are not earning their proper income, for as a whole they are earning as much and more than the Springfield lines.

A similar comparison is of much interest between the lines in the Springfield central area, on which it is proposed to charge only 5 cents, and the lines passing out from this central zone, on which it is proposed to charge 10 cents. The figures used were those for September of this year, except in the case of the line from Court Square to Westfield, which was specially prosperous in September because of the Camp Bartlett traffic; so the figures used for this line were those of September, 1916. Now, the proposed 5-cent group of lines in the center of Springfield earned on average 36.2 cents a car mile, while the 10-cent lines earned only 28.6 cents, or 21 percent less. But, taking the earnings per car hour as the really fair basis of comparison, the 5-cent lines earned actually less than the 10-cent lines, viz., $2.76 a car hour, against $2.88. The difference is due of course to the slower speed of the lines in the center of Springfield, which means higher operating expenses, especially for platform labor.

Arranging all the lines of the Springfield Street Railway system in two groups, first according to their earnings per car mile, and then according to their earnings per car hour, it will be seen that in the car mile group the six best-paying lines are all in the center of Springfield, on which a 5-cent fare is to be maintained. But when the same lines are all grouped according to the much more reliable basis of earnings per car hour, the best-paying lines are those on which 10 cents is to be charged.

SPRINGFIELD STREET RAILWAY

All Lines Arranged by Revenue per Car Mile and Revenue per Car Hour

Figures are for September 1917

Line	Revenue per Car Mile	Revenue per Car Hour	Proposed Fare
Walnut Street & X to Lyman Street	$0.43	$2.75	$0.05
King Street—Lyman Street	$0.42	$2.64	$0.05
Maple Street—Hamburg Street	$0.41	$2.61	$0.05
Belmont Avenue—Wason Avenue	$0.40	$2.98	$0.05
Wilbraham Rd—Brightwood	$0.39	$2.95	$0.05
Sumner Avenue & X to Brightwood	$0.38	$3.13	$0.05
Liberty Street to Chicopee Falls	$0.36	$2.65	$0.10
Benton Street—Lyman Street	$0.36	$2.55	$0.05
Palmer—Court Square	$0.35	$4.69	$0.10
Dickinson Street—Plainfield Street	$0.35	$2.75	$0.05
Worcester—Court Square	$0.34	$5.38	$0.10
West Springfield—Pine Point	$0.32	$2.61	$0.05
Chicopee via Brightwood	$0.32	$2.89	$0.10
Chicopee Falls via Street James Avenue	$0.32	$2.42	$0.10
Westinghouse Extras	$0.32	$2.13	$0.05
Westfield—Court Square (1916)	$0.31	$3.54	$0.10
Catherine Street—Worthington Street	$0.30	$2.55	$0.05
Mittineague—E Longmeadow	$0.30	$2.73	$0.10
Holyoke—Court Square	$0.29	$3.31	$0.10
Huntington—Westfield	$0.28	$3.77	$0.10
Chicopee Junction via Glenwood	$0.27	$1.98	$0.10
Ludlow—Court Square	$0.25	$2.81	$0.10
Ware—Palmer	$0.24	$2.73	$0.18
Hartford—West Side	$0.24	$2.77	$0.10
Three Rivers—Palmer	$0.23	$2.08	$0.12
Longmeadow—Court Square	$0.22	$2.71	$0.10
All Night—State Street	$0.22	$1.78	$0.05
All Night—Forest Park	$0.21	$2.00	$0.05
Feeding Hills—Hancock Street	$0.20	$1.98	$0.10
Monson—Palmer	$0.19	$2.15	$0.12
Bondsville—Palmer	$0.19	$2.15	$0.12
Westfield—Holyoke (1916)	$0.19	$2.36	$0.12
Mill Street—Union Street & Westfield	$0.17	$1.38	$0.06
Franklin Street—Highlands & Westfield	$0.12	$1.01	$0.06

If it has been proven that the proposed fare system is unjust, unwise, and undesirable, the next thing is to consider other ways in which the street railway company can get an increase in revenue sufficient to meet any real needs. There are a number of other ways possible for increasing revenue.

1st—A change might be made for all free transfers, one cent as in Cleveland, or two cents as asked by street railway companies in New York and Brooklyn.

2nd—Fare zones might be shortened in length.

3rd - A real zone system might be introduced, not one with a 5-cent fare for each zone, but with increases of one or two cents for each zone.

4th—The unit of fare might be raised, and 6 cents charged for each zone as existing at present.

5th—Economies of operation might be introduced, some of them having been suggested by Professor Richey in his printed report, such as the operation of trailers, cutting out a certain amount of unprofitable car mileage, speeding up the cars by making fewer stops and stopping and starting more rapidly, and other ways which will be suggested later.

6th—Increasing the traffic by inducing more people to ride without increasing the operating expenses.

A change for transfers is the method of raising more revenue favored by the largest street railway companies in New York and Brooklyn, and their petitions to the Public Service Commission ask for the right to charge two cents for a transfer. Preference is expressed for this method of raising the fare on the ground that it would not tend to discourage persons from riding altogether, but would discourage unnecessary riding, inducing people to take direct cars to their destinations and walk more, making it possible to haul passengers with fewer cars than now, especially on crosstown lines. These arguments sound plausible, and it is quite possible that the extent to which the free transfer is used does tend to require more car mileage than really necessary. On the other hand, if the experience of Cleveland is of any value, a charge for transfers does not reduce their use to any material extent, increasing revenue instead of permitting a reduction in operating expenses.

The Cleveland Railway Company, finding the need for more revenue in 1914, was permitted by the city to charge 1 cent for transfers with no rebate, the regular fare remaining 3 cents. The effect of the 1-cent charge was hardly more than to check for one year the increase in the transfer traffic. Comparing the years before and after the charge was introduced, the number of fare passengers increased 9 percent in the two years while the number of transfer passengers increased only about 3½ percent. The following year, however, the fare passengers increased 13 percent and the transfer passengers 12 percent, showing an almost complete recovery from any effect of the increased charge.

If a 1-cent charge for transfers were adopted in Springfield, it might be expected then that there would be practically a clean gain of 1 cent for each transfer passenger, except that the transfer traffic might not increase the first year. As to the actual income which a 1-cent transfer charge might bring in, it could be estimated as follows: If the 1-cent charge had been in effect for 1916, the number of persons paying the 1 cent could be taken as the actual number of free transfer passengers carried in 1915. This was 7,427,343, which would have brought in $74,273.43 for 1916. The amount is not large because the ratio of free transfer passengers to revenue passengers is small compared with many other cities, the free transfer passengers for 1916 for the Springfield system.

being about 18 percent of the revenue passengers. The proportion of transfers is generally greatest in the largest cities, running as high with one New York company as 73 percent. In Cleveland, the ratio of free transfer passengers to revenue passengers in 1913, the year before the 1-cent charge was introduced, was 37¼ percent. In 1915, the first complete year after the charge was made, the proportion was 37.6 percent, almost exactly the same as in 1913, showing how little effect the charge had on the traffic.

A universal charge for transfers would have numerous disadvantages for Springfield, which would have to be carefully considered before adopting any such plan. In the first place, a 1-cent charge would only produce a small part of the additional revenue desired by the company. This additional revenue for 1917 amounted to $618,278. The sum which might have been collected from transfer passengers for 1917 can be approximated by taking the number of free transfers collected in 1916, viz., 8,211,335, which at 1 cent each would bring in $82,113.35, which is about 13 percent of the desired increase in revenue.

In the second place, a charge for transfers would discriminate against persons who did not live on through routes, and the discrimination would be still greater if a 2-cent charge were made, such as proposed by the New York street railway companies.

The disadvantages to a company of a charge for transfers were clearly brought out by the Boston Elevated Railway Company in their statement to the Special Commission of 1916, especially where it says: "A charge for transfers from one surface line to another might prove of advantage if the Company could be guaranteed against having to provide additional through service, but the minute passengers were required to pay for their transfers the pressure upon the Company to provide a through service for a single fare would be very great." As a matter of fact, this is just what has resulted on the largest street railway system on the Continent of Europe, where a flat fare is charged as in America but no free transfers are given. The company has had to adopt the policy of providing through routes between practically all the different sections of the city, just as suggested in the Boston Elevated statement. This is a matter of considerable difficulty and expense and requires the public at times to have to walk considerably farther than they really ought to be required to, in order to get to and from home and work without paying double fares.

A charge for transfers is hardly fair, especially a charge of 2 cents or more, unless it is imposed simply on exceptionally long riders; or unless it is part of a zone system of fares, where each passenger pays according to the actual distance ridden, as is the way in England; or unless the cash fare is less than 5 cents, as it is in Cleveland, where the 1-cent charge in addition to the 3-cent fare is hardly felt.

The method of increasing revenue by shortening fare zones has some strong advocates. But it is very difficult to introduce it on a large system where the unit fare is 5 cents, unless the rides are so long that the introduction of an additional 5-cent zone at some point means only a small proportional increase in the total fare. The plan is simply impossible under the conditions existing on the Springfield system, without imposing grave injustice on many passengers, and the proposed fare system is simply the most extreme form of the shortening of fare zones, in that it introduces two 5-cent zones where only one exists today on the lines that run outside the 2¼ mile circle around Court Square.

The shortening of fare zones was recently discussed at the fall meeting of the American Electric Railway Association, held in New York City to consider the whole fare question. But, as advocated at this meeting, the shortening was

merely what is proposed to be applied to the Milwaukee zone system, which consists of a central 5-cent fare zone, leaving a radius of from 3¼ to 4¼ miles surrounded by a succession of fare belts about a mile wide, to ride in each of which an additional fare of 2 cents is charged. It is now proposed by the St. Nicholas Railway Company in Milwaukee to create a new mile-wide belt or fare zone just inside the boundary of the present central 5-cent area, that is to create a new 2-cent zone through which all the suburban riders must pass. This is a very different plan from the one proposed for Springfield; for the Milwaukee plan raises the fare just outside of the 5-cent zone only to 7 cents instead of from 5 cents to 10 as proposed for Springfield.

The Milwaukee Company is entirely satisfied with its zone system having a central 5-cent area with an average radius of 4 miles, surrounded by 2 cents a mile zones outside; but this system does not seem applicable to Springfield. In the first place, the Springfield Street Railway Company does not serve simply one city and its suburbs, but a number of cities and town centers lying near together. The Milwaukee zone system, with its 2 cents a mile belt, might fit in all right on certain Springfield suburban lines, like Longmeadow, Agawam, and Feeding Hills; but it would never do for the Chicopee line, the serving of which from Springfield seems to require a 5-cent fare. When you have cities and towns grouped closely together, you need a 5-cent area around each, to put in practice the Milwaukee plan, and as a matter of fact, a 5-cent area around each large factory. And if 4-mile circles were drawn around the principal centers of the Springfield system, the result would be to enclose practically the same areas as are served by the 5-cent fare today.

For you would have to take as centers for the 4-mile circles not only Court Square, Springfield, but also Brightwood, the Westinghouse works, the Water shops, Chicopee, Chicopee Falls, Indian Orchard, and Ludlow. Springfield might require only one 4-mile circle, but the Palmer section would require circles centered about Palmer itself, Monson, Thorndike, Three Rivers, Bondsville, and Ware.

A zone system based on 2 cents a mile may work on the Boston & Worcester line, but how would it be applied on the Chicopee and Ludlow lines, where there are over 100 passengers found at one time on cars? The conductor simply could not go through such cars to pick up the passengers' tickets every mile and see that everyone got off in the right zone. The only way that such a plan could be worked on the Springfield lines would be by adopting the pay-as-you-leave system of Cleveland, giving each passenger a check showing where he got on a car, to be surrendered when he got off. And would even this simple plan be practicable with the kind of foreigners riding on some lines?

It may be possible to work out a zone system of fares and fare collection for this country, charging according to distance ridden. Such zone systems are in universal use in England and also elsewhere in Europe. But this requires an unusual amount of cooperation on the part of the passengers, and especially of the police and the courts in enforcing the regulations. For Springfield, the present zones with their existing overlaps seem much too satisfactory to be disturbed. People are used to them and dependent on them. Their places of work and their homes are based on existing conditions, and something vastly better and fairer than the proposed plan must be submitted by the Springfield Street Railway Company before the Commission should give its approval.

The basic fare unit for any zone system should never be 5 cents or 6 cents as proposed for Springfield. In England, the largest fare unit used is 2 cents

for each zone, starting with 2 cents instead of 5, while in many cities 1 cent is the basic fare unit. Cleveland uses both 1 cent and 2 cents for a second ride, after the first 3-cent fare is paid, viz., 1 cent when a transfer is used, and 2 cents additional for a ride outside the city limits. To charge 5 cents and 6 cents for each additional zone is simply impossible.

Assuming still that the Springfield Street Railway Company requires a larger revenue and that additional revenue can only be obtained by some method of raising the fares, the fairest and most practical way of raising the fares, the way open to the least objections from the point of view of the public, appears to be to adopt a 6-cent fare unit all over the system, leaving the zones and overlaps exactly as they are. From the point of view of the company, there are, of course, several objections to the plan.

First—That it would not produce enough revenue.

Second—that it would encourage jitney competition in Springfield.

Third—that it would increase the difficulty of fare collection, by making it necessary to get the extra cent from every passenger on the system, instead of merely from half the passengers.

It is quite true that a flat fare of 6 cents would only bring in a small part of the additional $618,228 desired this year by the company, and it seems very probable that a universal raise of 20 percent in the fare unit would be accompanied by the estimated loss of 10 percent in the total traffic, and bring in only something like the $176,000 a year mentioned by Mr. Warren at the first hearing, or 28½ percent of the desired increase. But one of the results of investigating the company's figures was that they asked for a great deal more of an increase in revenue than they could reasonably expect to get and indeed even more than they have made plans for using. Just how much the company really needs in the way of an increase will be taken up later, but substantial economies in operation can be adopted which will at least greatly reduce the amount of additional revenue required. For example, the company, in figuring out their operating expenses for this year, apportioned 20 percent of the probable total revenue to maintenance of way and equipment, and wanted 8½ percent more for depreciation in addition to the 20 percent for maintenance. This total of 28½ percent for maintenance and depreciation would be one thing if the company had earned the money and times were normal. But to expect to have any such sum to spend with the present condition of the company's finances and under war conditions, and to run up the operating expenses to 104 percent of the normal total revenue is certainly not in accord with sound business principles, and is putting far too much of a burden all at once on the public.

Taking everything into consideration, the most the company ought to expect from the public would appear to be a 6-cent unit of fare. Whatever further revenue the company requires ought to be obtained by economies of operation.

A raise in the fare unit from 5 cents to 6 cents, besides causing a 10 percent loss of traffic, is open to the further objection of encouraging jitney competition in Springfield, just at the time when this competition has been greatly reduced by the passage of a regulating ordinance by the Springfield City Council. But whoever is engaged in a general business with the public as customers, and undertakes to raise prices, must be prepared to meet competition. And as the jitneys under the new ordinance are not allowed to charge more than 5 cents, a 6-cent fare on the streetcars would certainly give the jitneys all the business they could handle.

It has been suggested that if the Street Railway Company wants to charge 6 cents in Springfield, an attempt ought to be made to force the jitneys to charge 6 cents also. On the other hand, the City of Springfield has already gone as far as the company could possibly expect in regulating the jitneys, and if anything, it has discriminated against the jitneys in favor of the streetcars. The jitney ordinance requires each vehicle operator to be licensed. Every licensee must file a bond for $1,000. Every jitney must be operated on regular routes at least six hours a day and must go to the end of the route on every trip. The number of passengers that can be carried is strictly limited to the capacity of each vehicle.

When these conditions are examined in detail, it is seen that the city has imposed conditions on the jitneys, some of which the Street Railway Company would never accept. The Street Railway Company does not have to furnish a bond of $1,000 for each car operated. The employees are not licensed by the city as they really should be, after inquiry as to their character and proof of their fitness to be in charge of a vehicle possessing elements of danger to the public. Streetcars are not inspected by the city to see if they are always in proper and safe condition. No such adequate signs are required on streetcars as on jitneys, and a stranger often has a hard time finding where the cars run. The streetcars do not run to the end of the line every time; sometimes they turn back and cause real hardships to passengers, as in the case of the last car at night. No standing is permitted on the running boards or fenders of a jitney, while no limit is placed on the standing loads of streetcars, inside or out, and one open car was found in regular service during the investigation carrying at least 175 passengers, with persons standing on both front and rear fenders, and at least 60 on the running boards.

As the jitney, in good weather, can carry passengers much faster and more comfortably than the streetcars, especially in the rush hours; as people wish to ride in automobiles and operators are willing to carry them for 5 cents, it certainly would not be fair to impose any severer restrictions on the jitneys than now exist.

There is only one effective way to meet jitney competition, and that is for a company to give such good service that the public prefers the streetcar to the automobile, and either will not permit the jitneys to come in or will not patronize them if they do run. There have never been any jitneys in Cleveland, Denver, and many other cities where the service is good or the fare so low that the jitney cannot live.

If the Street Railway Company wishes to maintain a 5-cent fare in the Springfield central area in order to lessen jitney competition, it might be permissible, provided the unit of fare was kept at 6 cents elsewhere. But under no conditions would it be just to raise the outside fare above 6 cents, in order to guard the company in Springfield against competition which is the direct result of insufficient service and inadequate speed. A fare of 6 cents outside the Springfield central area, allowing for a 10 percent loss of traffic, would apparently bring about an increased revenue of around $80,000 a year, or only about half what a universal 6-cent fare would bring in. This increase would be better than nothing, however, although it illustrates one of the great difficulties any company must contend with that wishes to raise its fares.

The third objection suggested to a universal 6-cent fare, that it would increase the difficulties of fare collection by entirely eliminating the 5-cent unit and requiring the extra cent to be collected from every passenger, is hardly a serious objection. If the company expects to break away from the most convenient

and long established unit of fare they must also expect a large amount of trouble to be met with and must accept any new problems cheerfully. And, of course, they could not expect the passengers outside of Springfield to be burdened with a 7 or 8-cent fare in order to leave the company relieved of any difficulties in a 6-cent fare collection in the City of Springfield itself.

So the 6-cent fare question is left, in the hope that if any raise of fare is made, every passenger shall be treated exactly alike, and that the home owner in the suburbs shall not be discriminated against in favor of the flat dweller in the City of Springfield, nor the worker in one factory burdened by a higher fare than another.

Coming now to the last stage of the inquiry, the final question is: does the Springfield Street Railway Company really require a larger revenue, and if so, how should it be obtained?

When the announcement was first made that the Springfield Street Railway Company had applied for a raise in fares, at first it seemed incredible that the company had any grounds for seeking increased rates. Here was what appeared to be one of the most prosperous street railway companies in the State, with a very conservative capitalization, serving a rapidly growing community of 200,000 people, with a very heavy traffic and good earnings, paying nearly the largest dividends of any company in the State.

But as soon as a real examination was begun of the property, it became evident that the prosperity was really on the surface, and that the very conservatism of the capitalization was one of the company's chief troubles, because the community and the traffic had grown faster than facilities had been provided. On December 31, 1916, the total capitalization of the company, including stocks, bonds, and premiums paid in, amounted to about $7,250,000, while the total permanent investments were about $8,000,000. Now, it is widely recognized that a well equipped and well managed street railway should have at least $4 of investment for every dollar of revenue. The total operating revenue of the Springfield Street Railway Company for the year ending December 31, 1916, was about $2,400,000. This means that the investment, instead of being $4 for every $1 of revenue amounted to only about $3, taking only stock, bonds, and premiums, or $3½ taking the total permanent investments. If the company were properly capitalized, it ought to have had at the end of 1916 at least $9,600,000 invested instead of only $8,000,000. In other words, the system was deficient about $1,600,000 in investment.

Now, a company which has a very low ratio of capital invested to income may prosper, unless, as is too often the case in this country, the lack of capital actually cramps the business. For a long time it was the smallness of the capital that enabled the Springfield Street Railway Company to pay 8 per cent. dividends, and if conditions were normal and the company knew how to operate as economically as many other companies in the country, it might not have had any trouble in continuing to pay a good return on the investment with a 5-cent fare.

What a well managed company might be earning on an investment similar to that of the Springfield Street Railway Company can be figured out by using the tables prepared by Mr. John A. Beeler for a recent fare case, and published in the *Electric Railway Journal.* Using Mr. Beeler's table for average United States conditions instead of the table for the most favorable conditions, and taking the total permanent investments for Springfield instead of the actual capital, the following results are obtained. Starting with an investment of

$3.37 for each $1 of revenue, the income of a well managed company ought to be apportioned as follows :

Operating expenses	59% (The average for 975 electric railways)
Taxes	6%
Depreciation	6⅔%
Total	71¼%

leaving a balance of 28½ per cent. of the income available for return on the investment, making an actual return of no less than 11½ per cent. on the in vestment, which the Springfield Street Railway Company ought to be earning if it were as well managed as the average American street railway company. Instead of 11½ per cent., the Springfield company last year earned only 4 per cent. on the total permanent investment, and this year it claims it will have a deficit. Of course 1917 is not a year of normal conditions, but the 4 per cent. earned last year can well be compared with the 11½ per cent. which an average company would have earned.

. The reason that the Springfield Street Railway Company is not earning anything like 11½ per cent. is, in the first place, because it is not economically operated, and, in the second place, because the capital is lacking where it very seriously cramps the business, in the absence of adequate shops, of sufficient double tracks, of an adequate number of cars, and other ways, all of which tend to reduce income and increase expenses.

It is a rather interesting situation to find that two of the leading railway companies in the State are in financial difficulties because of diametrically opposite conditions of capital, viz., Springfield Street Railway Company having too small an investment, and the Boston Elevated Railway Company too large an investment. It is also interesting to note that the Boston Elevated Company is trying to carry exactly double the amount of investment per $1 of revenue that Springfield is. The Boston investment on June 30, 1916, including all the subways, tunnels, elevated and surface lines, appeared to amount to about $6½ per $1 of total revenue or twice Springfield's ratio of $3½ to $1 of revenue.

The lack of adequate investment in the Springfield Street Railway System is not merely one of figures, but must be apparent to any one who critically examines the situation. As already suggested, the absence of sufficient invest ment is most strikingly found in the lack of adequate double tracks, of enough cars, of anything like proper shop facilities, and for a while at least in a badly overloaded power house.

It is only fair to state at this point that the failure of the company to provide sufficient tracks, equipment, buildings, and other requirements should not be charged up to Mr. ·wood, who appears to be doing everything in his power in this respect at least to make up for past delinquencies. He has overcome the lack of power facilities by the new contract with the Turner's Falls Company. He is trying to evolve the best shop facilities he can out of most unpromising buildings at Carew Street. He has ordered 20 new car bodies to be placed this winter on old open car trucks, with old motors and electric equipment. And, as you have probably yourself seen, he has put in operation this summer a new· car operating station and storage yard at Hooker Street, which is thoroughly up to date and has long been urgently needed.

Finding that the Springfield trackage and equipment were inadequate to-day for the business, a study was made of the growth of the facilities for the past ten years, considering the increase in the population of the district as well as the increase in traffic. Electric railway traffic, under the stimulus of modern

conditions, generally increases much more rapidly than the population, and Springfield is no exception in this matter, for, while the total population served by the street railway increased from 1907 to 1916 about 32 per cent., the number of passengers carried increased nearly 60 per cent. But to carry these people and provide for the growth of the district, the track mileage, the number of cars available, and the number of car miles operated, did not increase in anything like a sufficient amount.

The new miles of route opened from 1907 to 1916 amounted to only an increase of 5 per cent. to accommodate the 60 per cent. of growth of traffic, though the total miles of single track come out a little better with a 10½ per cent. increase, much of it due to double tracking. The total number of cars owned increased only 20½ per cent, though the car mileage increased 30 per cent. But this car mileage had to take care of a traffic increase of 60 per cent., which appears to account for the serious overcrowding of the cars found at the present time.

The failure of the Springfield Street Railway Company to keep pace with the growth of the district is even more strikingly shown in comparing the facilities provided on a per capita basis. For example, in 1907, there were 8⅓ miles of electric railway main line for every 10,000 people in the area served by the Springfield Street Railway Company. In 1916, the miles of main line per 10,000 population was only 6⅔ miles, a falling off of 20½ per cent. The number of closed cars available for winter service per 10,000 population increased 20 per cent. from 1907 to 1916, which is to the credit of Mr. Wood, although the total number of cars owned fell off 9 per cent. per capita.

But the thing that appears most serious in this comparison for the past ten years is the fact that the rides per capita in the Springfield district have practically ceased to increase for the past four years. And there seems to be only one explanation for this stagnation, viz., that the lack of proper street railway facilities has actually checked the growth of the business.

Here again the story told by the figures is borne out by the actual conditions found on the street railway system. And no one realizes the lack of adequate facilities more keenly than the officials of the company themselves. They point out the need of new lines in the Carew Street extension and also the lack of any crosstown line in Springfield connecting up the routes north and south of the Boston & Albany Railroad. They find the operation of city lines over single tracks a great handicap in many instances. They realize that single-truck cars are very unsatisfactory for handling rush-hour crowds, but every closed car that is fit for operation has been saved and put in operation to handle the peak loads.

There is certainly urgent need of more cars on the system, and Professor Richey's survey shows a very serious condition of overcrowding, not only at the rush hours, but all day long. And the extent of the standing in the slack hours is even more serious than in the rush hours, for it is in the middle of the day that it is most important for a company to encourage riding, in order to raise the load factor. And yet on some lines passengers were found standing last winter during 13, 14, and even 15 hours, during the day, instead of simply in the rush hours. While these cars at the slack hours were not overcrowded as a rule, at the same time it is a very poor business policy to have any passengers required to stand during slack hours, especially in a city like Springfield, where distances are so short that it takes very little discomfort to make a person walk or patronize a jitney.

The operating conditions in winter have had to be judged largely from Professor Richey's survey, as the open cars were still running in Springfield

in October and the real shortage of cars naturally does not occur till all the open cars are taken off. The survey certainly showed a very unsatisfactory amount of overcrowding during the rush hours, an unusual amount for a city the size of Springfield. Cars with loads of over a hundred passengers were altogether too common, the heaviest load found being 141 passengers on a car seating only 44, with 97 standing. This is about equal to the very worst overcrowding in the New York subway, and if the Springfield Company expects to charge 10 cents for riding on such overcrowded cars and obtain earnings of 50 or 60 cents a car mile, is it really any wonder that the jitneys did a flourishing business, and that they are coming back again, in spite of every handicap which has been imposed upon them?

While the worst overcrowding probably occurs in winter, two examples of dangerous overcrowding were seen in October on open cars at the Westinghouse works. One car left for Carew Street at the evening rush hour with at least 175 passengers on board, as already described in discussing standing on jitneys. A small open car following carried 110 passengers with 60 standing. This particular night there were not cars enough furnished to carry the people home, and an hour after the day's closing time there were people still waiting out in the rain for a chance to get on a car. Then a derailment occurred which made it nearly another hour before there was another car back to Springfield.

The lack of sufficient double tracks is naturally a cause of frequent irregularity in the running of the cars, which is sometimes aggravated by the fact that car crews meeting on a single track stop to argue as to who shall turn back to the nearest siding. If trailers or multiple unit operation were only used in Springfield, some of the handicaps of single tracks would be reduced. But when not only two or three single cars are scheduled to run in the same direction at the same time over a single track line, but even 16, as were found in the Westinghouse schedule, it is no wonder that the service gets greatly demoralized, that bad gaps constantly appeared in the survey records, and that excessively heavy loads were recorded on late cars.

Power conditions were generally satisfactory during the times of observation in September and October, except on two occasions, when the voltage was too low to permit reading on the cars, causing once an actual tie-up for a short period. But the company officials are very much concerned over the power situation, especially as new apparatus has been delayed which would afford relief; and the operation of the new power contract is eagerly awaited.

The handicap caused by the absence of adequate shops can be judged from the fact that the company is obliged to send its cars to the Wason Company to get alterations made which many companies undertake in their own works. The lack of proper shop facilities is evidently one of the reasons why maintenance expenses are so high.

It may be thought by some persons that all these facts showing the lack of investment in the property and the need of more facilities are simply arguments for higher fares. On the contrary, they are reasons against raising fares; for what the Springfield Street Railway Company needs most at the present time is to recover the increase of traffic which has been checked during the last few years by the lack of facilities. And in order to encourage traffic, the worst thing in the world is to raise fares. In order to carry additional capital and promote a healthy increase in the business, people must be encouraged to ride by every means, and not discouraged. It is no use to build extensions and raise the fare to ten cents at the same time.

A second great difficulty with the Springfield Street Railway Company is exceedingly high operating expenses. These have been increasing steadily every

year since 1911, when the ratio of expenses to income was 69 per cent., until for 1916 the operating ratio was over 80 per cent., while the probability is that for 1917 the ratio will be 90 per cent. Professor Richey, in making estimates for 1917, went still further and submitted figures which would make the operating ratio nearly 105 per cent. of the probable revenue for the year, leaving a deficit with nothing for taxes, interest charges or other return on the investment. Naturally these operating figures, which total up to 105 per cent., must be accepted with considerable discount. They represent the maximum amount that the company would have liked to spend this year, the amount they might have spent if they had obtained the right to raise their fares to 6 and 10 cents.

The most serious thing about these operating figures is the fact already referred to that the company has not undertaken any real economies this year that would have kept the expenses within reason and made it unnecessary to ask for a raise in fares. Even the economies recommended by their own expert, Professor Richey, as a result of his survey, have hardly any of them been carried out.

Another very serious aspect of the company's financial policy this year has been the stopping of the dividends, causing great injury to the company's credit at the very time when new capital is urgently needed to build up more business. The maintaining of the company's credit was one of the most important duties of the management in the interest of the public, leaving out of account the stockholders, and sufficient economies should have been effected to maintain this credit. One cannot help suspecting that the real reason for passing the last dividend was to obtain a most convincing argument to use in support of higher fares.

It would not have taken any impossible economizing to have paid 6 per cent. dividends this year. It would merely have required keeping the operating expenses down to last year's total. Now of course prices have gone up and wages have gone up. On the other hand, economies were possible in the line of maintenance, especially of track; of power by cutting out unnecessary stops and by the use on the cars of coasting recorders on current meters; of wages, by operating trailers and one man cars. Also some of the cuts in service recommended by Professor Richey might have been made for the time being.

Other street railway companies have found it possible to keep their operating expenses down to reasonable proportions in spite of war conditions. Take for example the three largest New York companies which have applied for a raise in fares. The Brooklyn surface lines for the year ending with June, had operating expenses ranging from 59 to 77 per cent. of the total revenue, averaging about 65 per cent. The New York Railways Company had an operating ratio of 68 per cent; and the Third Avenue Company, 62½ per cent. And none of these companies are trying to operate with all the economy possible, as not one has trailers in use, nor one-man cars. The two Manhattan companies are not paying dividends, of course, because they are capitalized at about $500,000 and $2,500,000 a mile of single track, against $40,000 a mile for Springfield. The Brooklyn Rapid Transit Company, however, pays 6 per cent. dividends, although its surface lines are capitalized at about $200,000 a mile.

It might be well to show more specifically how the Springfield Street Railway Company might have paid 6 per cent. dividends this year without a raise of fares. The total income from all sources for 1917 is estimated at $2,523,155. This figure is obtained by taking the actual passenger revenue received up to October 1st, and taking for the remaining three months of the year, October, November and December, the receipts for the same three months last year, adding an amount

based on the increased daily receipts of September, 1917, over September, 1916, after all Camp Bartlett traffic had been deducted, both for the Westfield-Holyoke line and the Westfield-Springfield line. The miscellaneous revenue was taken as the same as for 1916, without allowing for any increase.

The first item of operating expenses, viz., maintenance, is based on what the English have done under war conditions. Some of the English tramways have been able to get along with spending 9 per cent. of the operating income for all maintenance, including track, structures, and equipment. For the present purpose, the maximum figure spent by four of the largest English systems during the war has been taken, viz., 13 per cent. of the total income, or $328,000. Last year the Springfield company spent 18⅔ per cent. on maintenance, so that in an emergency like this, a considerable reduction could be considered for 1917.

For the second item of power, the estimate of Professor Richey for 1917 has been taken to work from, viz., $587,700, an increase over 1916 of 84 per cent., due largely to the excessive prices that must be paid for coal and to its poor quality. Under the stimulus of such an increase of cost, the company might have exerted itself, as other companies have done, and made a large saving in power, by various checking devices, by getting employees to cooperate, and by cutting down the number of stopping places. Some companies through these means have effected savings in power as high as 30 per cent., but as an increase of speed is desired in Springfield, a saving in power cost of only 15 per cent. is assumed as the maximum, leaving a total expenditure of $500,000 for the year.

For conducting transportation, Professor Richey's estimate for 1917 of $964,900 is taken as a basis, so as to include all possible increases in wages. The largest economy possible in platform wages could be obtained by taking one car out of service on each city line during the slack hours, and either lengthening the headway, or, what would be much better, speeding up the cars so as to maintain the present headway. This last practice would increase power consumption, unless at the same the number of stopping places were substantially reduced, a thing which Professor Richey recommended but which the company has not attempted to carry out to any extent. The average speed of the city lines at the present time is about 8½ miles an hour. The average speed proposed for the slack hours is 11 miles an hour, or exactly the speed used in Cleveland in the base-table hours. So the speed suggested for Springfield is below that actually used in Cleveland. The money saving from this speeding up or reducing service is ascertained by taking the saving in car miles and multiplying by the sum per car mile which would really be saved, amounting, according to the best authorities, to a little over 50 per cent. of the operating expenses per car mile, or a total saving for Springfield of $135,780 per year.. This sum would not all be saved out of transportation expenses, but the whole saving is included here for simplification.

There are several lines on the Springfield system which seem well adapted to one-man operation, especially the local Westfield and Palmer lines. In initiating one-man operation, the company might have started this year with the same headway as at present, and reduced this later when more money was available for operation. The annual saving from one-man operation in Palmer would amount to $15,934 and in Westfield to $9,650.

The Huntington line offers a slight saving in operation. At the present time, two cars are in service and are supposed to make the 12 mile run in 50 minutes east and 53 minutes west. But when the line has been visited, the power supply has been very deficient, and the cars at times make only about

one mile an hour up the grades. If this is generally the case, it might be better to keep one car only in service during the slack hours, and give it all the power, so that it can run faster and keep on time, which the two cars apparently cannot do. A single car ought to be able to cover the line in 45 minutes, which was the running time proposed when the line was built, and during the day there would then be a 90 minute headway instead of 60, but with the car on time, which is evidently not the case now. A new schedule has been made, worked out to meet the needs of rush-hour service, as well as the slack hours, which would result in a saving of about $3,120 a year. Another method of economizing would be to adopt one-man operation, keeping the two cars in service, which would save about $3,750 a year.

The simplest way to initiate trailer operation would appear to be to take all the single truck cars on the Springfield Division, 53 in number, and put them in trailer service at the rush hours after removing their motors and electric equipment. Pittsburgh operated single truck trailers successfully for a long time, and found that no air-brakes were necessary for safety, even though the cars were operated on some steep grades. There are 84 four-motor cars on the Springfield system, but almost any of the double-truck cars ought to be able to haul a single-truck trailer, judging from the Pittsburgh experience. The operation of the single-truck cars as trailers in Springfield would save about $20,000 a year.

Taking the traffic expenses as estimated by Professor Richey at $6,800 and the general expenses in the same way at $320,550, the total operating expenses for 1917, applying the economies suggested, would amount to $1,935,136, or 76¾ per cent. of the estimated revenue. Deducting from this the taxes at $153,000 as estimated by Professor Richey, and interest and other deductions of $148,275, the same as for last year, a balance is left of $286,744, sufficient to pay 6 per cent. dividends of $279,282 on all the stock and leave a surplus of $7,462.

ESTIMATES FOR 1917.

	Actual Year Ending Dec. 31, 1916	A. S. Richey Year Ending Dec. 31, 1917	J. P. Fox Year Ending Dec. 31, 1917
Total revenue, all sources	$2,401,953.77	$2,488,000.00	$2,523,155.00
Operating expenses:			
Maintenance	448,496.56	713,535.00	328,000.00
Power	318,688.67	587,700.00	500,000.00
Conducting transportation	859,573.55	964,900.00	779,786.00
Traffic	6,674.97	6,800.00	6,800.00
General	301,447.34	320,550.00	320,555.00
Total operating expenses	$1,934,881.09	$2,593,485.00	$1,935,136.00
Net operating revenue	$467,072.68	—$105,485.00*	$588,019.00
Taxes	139,735.70	153,000.00	153,000.00
Gross income	$327,336.98	—$258,485.00*	$435,019.00
Deductions from gross income	148,274.63		148,275.00
Balance	$179,062.35		$286,744.00
Dividends, 6% on $4,654,700.00	244,371.75		279,282.00
Surplus or *Deficit.	—$65,309.40*		$7,462.00

These figures are not intended to show the only way that the company could have carried on its operations this year without a deficit, for there might be other and better ways in which economies could be effected. But it is hoped that they illustrate enough to convince the Commission that if the company had really tried every practicable method of economizing, they might have gone through the year, not only without a deficit, but without passing the dividend. It was a good deal of a puzzle at first to understand why the Springfield Street Railway Company was spending such large sums this year for maintenance, depreciation, and other operating expenses, and heading directly for a deficit. But as the investigation went on, the explanation for this prodigious expenditure became evident. The company evidently expected that it would be an easy matter to obtain a raise of fares, and to get from the public all the money needed for their heavy expenses and to pay the charges on any new capital raised or money borrowed. A very able campaign of education was carried out to prepare the public for a raise of fares and to make them believe that such a raise was the only way that an adequate service could be given by the Street Railway Company.

The company, after having committed themselves to very heavy expenditures and believing that they would be amply reimbursed by the public through the proposed raise of fares, has naturally been very impatient at having their program delayed by all this investigation, and their expenditures and estimates scrutinized to see if they were justified. Things might have gone more smoothly for the company if they had not made one great mistake in their program, in putting the entire burden of meeting their demands for more revenue upon only half of the community served, the 14 cities and towns around Springfield, leaving the City of Springfield almost wholly free of any contribution to their demands.

In view of the fact that the public served by the Springfield Street Railway Company is in no way responsible for the financial stringency in which the company finds itself, for the lack of adequate trackage, cars, shops, power, depreciation, and the high cost of labor, it is a question whether the company ought to put any of the burden of past neglect and inefficiency on the passengers riding today. There are some managements in the country who have conscience and spirit and persistence enough to work their way out of such difficulties without expecting public aid. If the Springfield company really requires outside assistance, this ought to be asked as a favor of all their passengers, and not be looked upon as a right to charge an increased toll for the privilege of riding. And the company, above all, ought to be willing to show that they themselves are making every possible sacrifice to make both ends meet, and that they have used every known economy of operation and saved every possible dollar of expenditure before calling on the workman and the shop girl to double and treble their contributions to the company's purse.

Instead of this, we have found that during the past year, with the cost of materials going up, the price of coal, and wages; with a shortage of men, inadequate shops, insufficient tracks and cars, that the company has been spending money more freely than ever, and that hardly a single method of real economy has been attempted. There are no trailers on multiple unit cars in operation to reduce the cost of platform labor, or one-man operation, either. With the cost of power nearly doubled, there have been no efforts to save current by the use of coaster clocks or meters, by materially reducing the number of stopping places, or getting the cooperation of the men. There has been no speeding up of the cars so as to give the same service with less mileage. There is no evidence of an appeal to the employees that they are working under war

conditions; that the company is in financial difficulties; and that the utmost cooperation is needed from the men to tide over the period of abnormal costs and expenses, and prevent the necessity of putting the burden of increased fares on passengers, many of whom can ill afford the raise of 140 per cent. and even more.

Instead of calling in experts who could show the company how they could economize and not only continue to operate at a 5-cent fare but build up more traffic than ever at the same time, the company had an elaborate survey made last winter, and a report worked up to show they must have higher fares; and then more work was done this summer to show how poor they were, with a campaign of publicity going on to prove that they must have more revenue. And yet, all this time, none of the simplest and cheapest and most effective methods of economizing have been attempted. The company say they will try some of these methods of economizing if they can get more money. But the methods ought to have been tried first, and then the company would not be in the unfortunate position before the public that they are to-day, asking for relief without having done anything to earn it. If half the effort that has been spent this year in trying to prove the need of more money had been put into saving money, the company would never have had to come to the Commission to ask for a raise of fares.

The year 1917 will soon be closed, too late for the Street Railway Company to carry out any of the suggested economies. The final question, then, is, what does the company require for 1918? If the company could have paid 6 per cent. dividends in 1917 by operating with real economy, the situation will be much more favorable in 1918, because the new power contract will come into operation.

The income for 1918 has been estimated by taking the total passenger revenue for 1916 and adding a sum obtained from the average daily excess receipts of September, 1917, over September, 1916, after eliminating the effect of Camp Bartlett. The miscellaneous revenue is that of 1916 without allowing for any increase. This would appear a very conservative method of estimating the earnings, a fact which is borne out by the small amount of increase of 1918 over the estimate for 1917, viz., only 4 per cent. The total earnings for 1918 work out at $2,622,470.

If the company begins at once to plan economies of operation for 1918 along the lines suggested for 1917, it seems reasonable to expect that the resulting savings could be counted on for practically all the year of 1918, especially as the suggestions made involve little or no expense on the part of the company, except in the matter of removing motors from the single-truck cars. Most of the economies would be effected by changing the schedules. In the matter of maintenance, the revenue for 1918 ought to be sufficient to permit 20 per cent. to be expended for upkeep and depreciation, or $524,494, instead of the reduction to 13 per cent. which might have been necessary in 1917. The cost of power has been taken from Professor Richey's estimate with the new contract in full operation. At the same time, as power is to be purchased, every possible economy ought to be adopted for saving current; and if the contract is not in full operation at the beginning of 1918, economies of operation ought to keep the total expense for the year down to Professor Richey's figure of $402,030.

The cost of conducting transportation has been kept at the figure suggested for 1917, viz., $779,786, although even greater economies than those suggested are possible from operating cars in pairs at the rush hours, and using only one man on runs where the traffic is very light. Traffic and general expenses have been kept at the figures of Professor Richey used for 1917, viz., $6,800 and $320,550. The total operating expenses come to $2,033,660 or 77½ per cent. of

the total revenue, which is too high an estimate rather than too low. With taxes and deductions for interest and other charges the same as for 1917, there is still left a balance of $287,535, sufficient to pay 6 per cent. dividends of $279,282 on all the stock and leave a surplus of $8,253.

ESTIMATES FOR 1918

	J. P. Fox Year Ending Dec. 31, 1918
Total revenue, all sources	$2,622,470.00
Operating expenses:	
Maintenance	524,494.00
Power	402,030.00
Conducting transportation	779,786.00
Traffic	6,800.00
General	320,550.00
Total operating expenses	$2,033,660.00
Net operating expenses	$588,810.00
Taxes	153,000.00
Gross income	$435,810.00
Deductions from gross income	148,275.00
Balance	$287,535.00
Dividends, 6% on $4,654,700.00	279,282.00
Surplus	$8,253.00

No attempt has been made in this report to show how the company could obtain the full 6 per cent. return they have petitioned for on their total assets of $8,500,000 and the contingency allowance, amounting in all to $545,463 a year. This sum would permit the company to pay 8½ per cent. dividends on their stock, and the management is too reasonable to expect the public to contribute any such sum at a time when they are on the verge of a deficit. If the company can pay 6 per cent. dividends, that surely is all they should hope for in these uncertain times.

If the company is patient, however, perhaps even the war conditions will bring greater returns instead of less. The establishment of Camp Bartlett on the Westfield-Holyoke line increased the company's receipts for September about $600 a day, and raised the car mile earnings of the line from 18½ to 56½ cents, or three times what they were a year ago. Some of the English street railways made more money last year than ever before in their history, in spite of excessive prices of materials, of having the majority of their employees enlist in the army, and of heavy charges for war bonuses and payments to the families of enlisted men. Liverpool last year earned no less than 15 per cent. on the total investment. While Glasgow, in the third year of the war, not only earned 11½ per cent. on the investment and turned over to the city treasury a profit of $785,000, but made the final payment to the city which has completely wiped out the entire $18,000,000 invested in the street railway system during the past 23 years. And these results were obtained in England with an average fare in Liverpool of 2¼ cents, and in Glasgow of only 1½ cents.

It has been possible in the limited time of this investigation to estimate only part of the economies which the Street Railway Company might introduce

in order to yield sufficient revenue to pay 6 per cent. dividends, and thus make possible the raising of the additional capital which will be needed as the business grows. Among the other economies possible are those suggested by Professor Richey in his printed report, where he made about 26 recommendations which would either increase the revenue of the company or reduce expenses. Of these 26 recommendations, only two have been carried out, and the rest are still under consideration by the company. One of the ways of increasing revenue was the suggestion that the methods of issuing transfers should be revised, which would bring in about $30,000 a year. Another suggestion was that pre-payment cars should be used for the Westinghouse service, because a large number of fares were being lost through the overcrowding of the cars. Neither of these suggestions have been acted on, nor the recommendation that trailers be tried. A few of the stopping places have been eliminated on some of the lines, but not enough to save power or permit the higher speeds that would require less cars.

Still greater economy in handling the Westinghouse traffic might be obtained by using vacant land near the works for a pre-payment area. If this were done, there is a possibility that the Westinghouse extras might all be handled as one-man cars, at least inbound at night. In view of the remarkable success attending the use of the largest city cars in one-man service in western and Canadian cities, their use should be carefully considered for a place like Springfield where the platform labor is so expensive, especially for rush-hour service. Westfield and Palmer are ideal places to make a success of one-man service, and there are possibilities even in Springfield itself.

There is one charge for transfers which might reasonably be made by the company, and which would compensate them for long rides across the present 5-cent area of Springfield. That would be to charge 1 cent for all transfers issued to passengers boarding cars outside of the 2½ mile circle around Court Square, and again, to charge 1 cent for all transfers issued to cars running outside of the 2½ mile circle. Under this plan, a passenger coming in from Ludlow to Court Square and wishing to take another car in Springfield, say to Brightwood, would be charged 1 cent for his transfer if he boarded the car east of St. Michael's Cemetery. In the same way, if he started at Brightwood and wanted to go to Ludlow, he would have to pay 1 cent for his transfer; but if he only wanted to go from Brightwood to Benton Street, he could do it for 5 cents on a free transfer, by taking a Benton Street car instead of a Ludlow car.

Any economies along the lines suggested should only be a part of the program of the Springfield Street Railway Company, if it wishes really to get on its feet financially and prosper in the future. Along with any economies, the company should provide every inducement for increasing traffic, for competing with the jitneys, and bringing up the business to where it would have been but for the neglect of past managements. For this purpose of developing a profitable business and serving the people of Springfield and the surrounding cities and towns, one cannot help expressing the opinion once more that a raise of fares is the very worst policy that the company could have adopted. It is an old-fashioned method of raising more revenue borrowed from the railroad companies, and, as the Commission has itself pointed out, it is a method of doubtful value. One of the most interesting parts of the first Bay State report was that where the statement was made that "The tendency in other parts of the country, in the main, is clearly to meet the new difficulties as a merchant in an ordinary competitive enterprise would seek to meet them, namely, by inviting additional traffic through faster, better or generally more attractive service or by decreasing expense through improved operating methods."

If Massachusetts street railway companies would only follow out these ideas as stated by the Commission and not keep coming in for a raise of fares, it would be better, not only for the public, but for the companies themselves. To some of those who have followed the movement to raise fares from the beginning, it is impossible to avoid the conviction that the results have been not only of doubtful value to some of the companies, but demoralizing to the whole electric railway industry. The result of raising fares in Massachusetts has been to encourage a country-wide movement, and companies are today demanding higher fares which are paying 6 per cent. dividends on an inflated capitalization. To permit a raise of fares on many street railways would be to put a premium on inefficient operation, or neglect of depreciation, and, on too many companies outside of Massachusetts, a premium on dishonest capitalization. If the Springfield Street Railway Company, with its ample earnings per car mile and per car hour, with a rapidly growing and highly prosperous population to draw business from, is permitted to raise its fares without having put into practice one single real economy that other companies are practicing all over the country, where is this thing going to end?

Just hear one example of what a street railway did, working under much severer conditions than Springfield. It was a company in a city of a million inhabitants, which had to pay $60,000 a mile for the construction of the lines or twice the Springfield cost, because of high prices of materials and equipment. In the last few years the currency of the country depreciated so that the company faced a serious situation. An American manager would have probably at once raised the fares, which would promptly have bankrupted the road, because the existing fares were already too high to meet jitney competition. Fortunately for the stockholders, the manager had been trained in Glasgow and he reduced his fares. Not only this, he made the service so attractive that he increased his load factor up to 64 per cent. without overcrowding the cars; and he put on trailers until the trailer mileage was 60 per cent. of the motor car mileage. As a result of this remarkable efficiency in operation, which is without a parallel in the history of street railways, the company paid 10 per cent. dividends last year and is actually earning 15 per cent. on its investment; and the average fare is only eight-tenths of one cent! The road pays because the manager, by his low fares, built up his traffic until the number of passengers per mile of route was 13½ times those of Springfield. And the whole thing was done in less than 8 years time.

Now of course it is perfectly hopeless to try to show the average American street railway man that he could really make more money by reducing his fares instead of raising them; by doing a wholesale business instead of a retail business; and yet the whole history of electric railways is full of examples proving that higher profits come from lower fares. And we have some examples right here in America-in Cleveland, Columbus, Montreal, and other cities, where a 3-cent fare during all or part of the day has produced remarkable profits, especially in Cleveland, where the 6 per cent. return on the investment comes from an average cash fare of 3½ cents, with a minimum fare of 1 cent on one line.

While it is impossible to expect such progressiveness from the ordinary street railway management, we can at least require and rightly demand that every company shall not raise its fares, and shall practice every economy known to the art of electric railroading, until the day comes when the street railway business is universally conducted along such progressive lines as found in the case of electric light, telephone and other companies, and the rates are voluntarily reduced in order to make larger profits.

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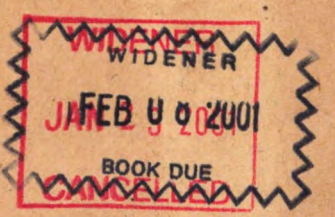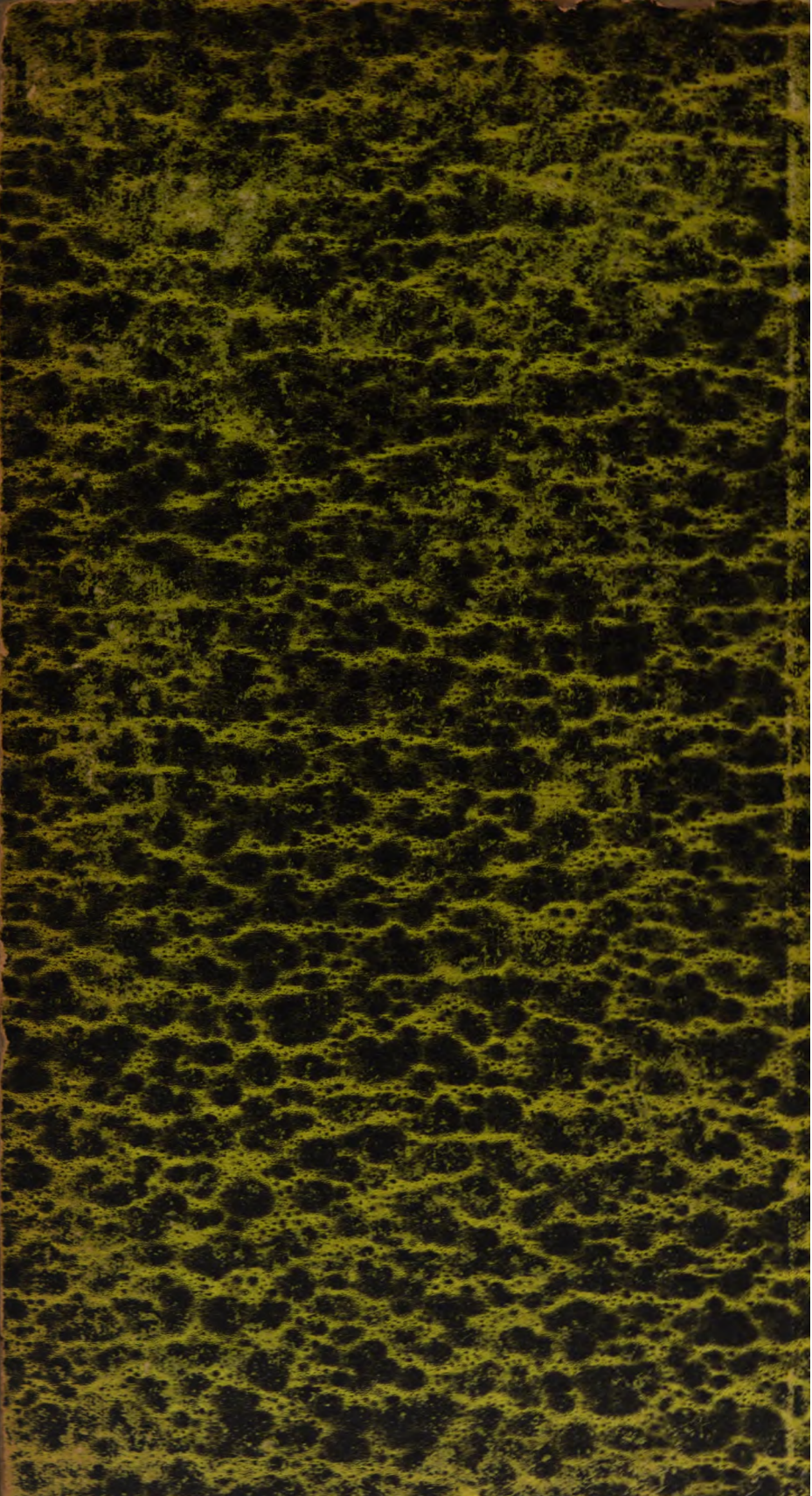
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